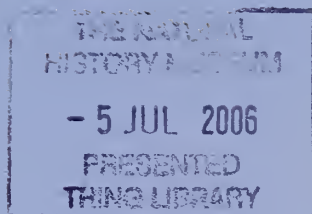




British Birds

July 2006 • Vol.99 • 337-392



Bernard Tucker
Memorial
Lecture

Short-billed
Dowitcher

White-throated
Robin



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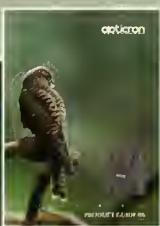
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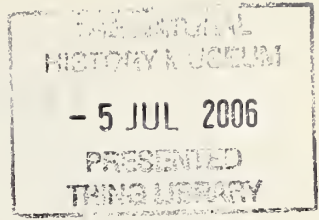


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Yet even more ways to dress eggs

ABSTRACT Traditionally, it has always been assumed that the reason for the patterns on birds' eggs is essentially visual – chiefly for the purposes of avoiding predators (crypsis) or, in the case of cuckoos, to mimic the eggs of their host. This paper explores the idea that the patterning found on the eggs of many species that have no apparent need for their eggs to carry visual signals is essentially functional. Data from the long-term study of Great Tits *Parus major* in Wytham Woods, Oxfordshire, suggest that pigment acts as a structural adaptation for the eggshell, and that it compensates for thinner areas of the shell, which in turn relate to the availability of calcium prior to and during egg-laying. This paper was presented originally as the 54th Bernard Tucker Memorial Lecture, given to the Oxford Ornithological Society and the Ashmolean Natural History Society, in November 2004.

'Oology taken alone proves to be a guide as misleading as any other arbitrary method of classification, but combined with the evidence afforded by due study of other particularities, whether superficial or deep-seated, it can scarcely fail in time to conduct us to an ornithological arrangement as nearly true to Nature as we may expect to achieve.' (Sir Alfred Newton – *Dictionary of Birds* 1896)

There are many things for which we should thank Bernard Tucker. He was a founder member of both the Oxford Ornithological Society (OOS) and the Cambridge Bird Club, and played a key role in founding both the BTO and the Edward Grey Institute, at Oxford University. But for all his unique contribution, Bernard Tucker had little to say about eggs – unlike his great mentor at Oxford, the Rev. Francis (Frank) C. R. Jourdain (1865–1940). Jourdain and Tucker founded the OOS in 1921 and, Tucker said later, but for Jourdain he would probably have been a botanist! Jourdain was an oologist, but more than just an egg-collector; he was an astute and meticulous student of ornithology and one of the greatest authorities of his day on the reproductive biology of Palearctic birds (Tucker 1940). Both Tucker and Jourdain made important contributions to Witherby's five-volume *Handbook of British Birds*, and so while Tucker described the birds and wrote of their habits, Jourdain described their eggs and nests. Jourdain's importance in the old world of egg-col-

lecting was such that he gave his name to the oologists' club: the *Jourdain Society*, whose collections now reside at the Oxfordshire County Museum. Since the 1950s, egg-collecting has of course been illegal in the UK, and I don't doubt the importance of that to bird conservation and welfare. But looking, as I have, at thousands of clutches in the field, and at extensive museum collections, such as the national egg collection at the Natural History Museum, Tring, I cannot but feel some sympathy for those earlier ornithologists who were simply struck by the beauty of birds' eggs.

Apart from recognising them as a conveniently packaged meal, humans have long been captivated by the beauty and diversity of birds' eggs; there is a hint of perfection in these marvellous objects. Indeed, a recent (February–July 2004) exhibition of birds' eggs at the Walter Rothschild Zoological Museum (part of the Natural History Museum) was entitled 'The egg: the most perfect thing in the universe?' Well, exaggerated though this claim may be, if it is perfection that we seek, we should not let our

delight at the artistry of the patterns on eggshells distract us from the functional aspects of the egg's pigmentation, for I would suggest that here lies the real wonder; it is here that there is a real pointer to the perfection that evolution strives for. The patterning on eggshells is not a trivial, abstract creation. It serves a function, and in this paper I hope to show that, at least for some of these patterns (perhaps in the majority of species), the function is intimately and exquisitely integrated with the dynamic function of the eggshell itself. I shall also describe how this piece of science has developed with input from various sources, and how specific circumstances and observations can lead to specific conclusions that have sometimes required a complete change in the conceptual model we had of the systems under study (Gosler *et al.* 2005; Higham & Gosler in press).

The appearance of eggshells

Before looking at the function of eggshells, we should consider their variation in appearance. It is clear that, despite the attention that eggs had received, by the end of the nineteenth century the diversity of patterns displayed on their shells was considered bewildering. Sir Alfred Newton had faith that this diversity must reflect the evolutionary relationships of the species concerned (see p. 338). But that belief requires the assumption that either the patterns are essentially non-functional, and so free to vary over time in parallel with the evolution of new species, or such selection as might act upon eggshell patterning would direct their evolution in more similar trajectories between related than between unrelated species. In other words, in either case, the eggs of closely related species (those that have diverged more recently) should be more similar than those of more distantly related forms. However, if pigmentation patterns are functional, and adaptive, and if common problems require common solutions, then we should see recurrent characteristics cutting across taxa; i.e. species which are only distantly related may have similar eggs (compare the eggs of Great Tit *Parus major* and Water Rail *Rallus aquaticus*).

Indeed, this is essentially what I aim to suggest here.

All birds' eggs are basically similar in structure, although there are minor, interesting, and presumably adaptive, differences; for example, the fact that megapode *Megapodius* eggs lack an air space. So the most obvious variation lies in their size, shape and, of course, colours. Although, among vertebrates, birds are not unique in laying an egg with a calcified shell, they are unique insofar as that shell is often pigmented. Because it consists almost entirely of calcium carbonate, the unpigmented shell is basically white. We might, therefore, also consider the 'primitive' condition to be a white, unpigmented, egg, and apparently in support of this assertion is the fact that most non-passerine species lay white eggs. It might come as a surprise to learn this because we think of the wonderfully cryptic patterns on the eggs of Charadriiformes (waders, gulls, terns, etc.) as the classic case of eggshell pigmentation (plates 167 & 168). But the eggs of these, and other species which are mostly ground-nesting (and therefore under strong selection by predators), are atypical of non-passerines. Consider owls (Strigiformes), woodpeckers and their allies (Piciformes), parrots (Psittaciformes), kingfishers and their allies (Coraciiformes), pigeons and doves (Columbiformes) and swifts (Apodiformes), to choose but a few orders represented on the British List out of many possible examples. All species in these orders lay pure-white



166. Clutch of Great Tit *Parus major* eggs, Wytham Woods.

Andy Gosler

Richard Chandler



Richard Chandler

167 & 168. Nest with eggs of Ringed Plover *Charadrius hiaticula* (same nest in both photos), Kent, May 1984.

eggs, and in many other orders some, if not all, species lay unpigmented eggs. Even within the Cuculiformes, so well known for their evolution of eggshell pigmentation that mimics that of their host species (usually a small insectivorous passerine), the typical eggshell colour of non-parasitic species is plain white. It is tempting then to assume that all these forms have white eggs simply because they have not evolved the mechanism to pigment their eggs, i.e. for one reason or another they simply haven't had to.

This idea has been around a long time; Alfred Newton suggested it in 1896. But I think that it is only partly correct. Kennedy & Vevers (1976) showed that trace amounts of protoporphyrin, what we recognise as the reddish eggshell pigments, occur in the eggshells of all bird species, even all those non-passerines that lay apparently pure white eggs. So while it is probably correct that these species haven't needed to evolve more overt patterns of pigmentation, for example because they do not suffer predation by visual (typically avian) predators, it may be wrong to think that the mechanism to pigment their eggs does not exist in these species. If this is right, it means that selection for pigmentation, for example by increased avian predation, could evolve a patterned egg very quickly, much more rapidly than if the actual mechanism had to evolve from scratch in every branch of the evolutionary tree.

This brief survey of non-passerine eggs therefore indicates a number of important things. First, while cryptic coloration is clearly

important for many ground-nesting species such as waders, nightjars (Caprimulgidae) and sandgrouse (Pteroclididae), this is actually the exception rather than the rule, but note that it is typically open-nesting species that lay pigmented eggs. Many of the non-passerines that lay white eggs also nest in holes, and while this behaviour might reduce the eggs' vulnerability to predators and obviate the need for cryptic pigmentation of the eggs, their appearance might also help the female to find the clutch in the hole. Even within the Charadriiformes, there are hole-nesting species that lay white eggs (e.g. Crab-plover *Dromas ardeola* and Puffin *Fratercula arctica*). Second, while offering a wonderful opportunity to study a dynamic evolutionary process, the eggs of parasitic cuckoos are exceptional in many ways (Davies 2002). The presence of gentes in the Common Cuckoo *Cuculus canorus* supports the view that pigmentation can evolve rapidly. This suggestion is also supported by the fact that non-parasitic Cuculiformes typically lay unpigmented eggs, but this fact also implies that the mechanism is probably more ancient than a superficial consideration of non-passerines might suggest. The intricate story of the Common Cuckoo was beautifully told by Nick Davies in his transcript of a previous Bernard Tucker Memorial Lecture, to which readers should refer (Davies 2002).

Concentrating now on passerine species (and remember that 60% of all bird species are passerines), there are some species that lay unpigmented eggs (the white eggs of Black Redstart *Phoenicurus ochruros* are somewhat sur-

prising) but the majority of passerines lay eggs with at least some pigment. The patterns on eggshells (of all species) are produced by pigmentation with biliverdin, producing greens and blues, and protoporphyrins, producing the reds, browns and black markings. While the former is a bile pigment, produced in the breakdown of haem (the essential component of haemoglobin), the latter is produced in haem synthesis (in mitochondria) within the cells. A notable difference in these pigments is in the ways that birds seem to use them. Whilst biliverdin pigments always form a ground colour to the egg, upon or within which there might then be speckling, protoporphyrins can appear as either a ground colour (e.g. the familiar brown domestic chicken egg) or as spotting – maculation. This also reflects a difference in the distributions of pigments within the shell, so that while the blue biliverdin pigments permeate the whole eggshell, protoporphyrins (even when a ground colour) tend to be concentrated in distinct layers within the eggshell or upon it. These compounds also have a number of interesting properties (see below).

A striking aspect of passerine eggs is that there appears to be as much diversity of pigmentation in this one order as there is across all the non-passerines put together (fig. 1). There are cryptically coloured eggs in the ground-nesting larks (Alaudidae) and pipits (Motacillidae), and eggs that appear to be cryptic, such as the uniformly dark brown eggs of Cetti's Warblers *Cettia cetti* and nightingales *Luscinia*. There are also, apparently, cryptic eggs in the corvids that are reminiscent of raptor eggs, but given that their *nests* are so conspicuous, it is perhaps debatable whether the pigmentation does indeed serve that function. There are also many examples of blue eggs in passerines. Biliverdin and protoporphyrin both have antioxidant properties. Recent research suggests that the blue biliverdin pigment might also act as an anti-viral agent, which might protect the egg and also indicate the condition of the female, though whether

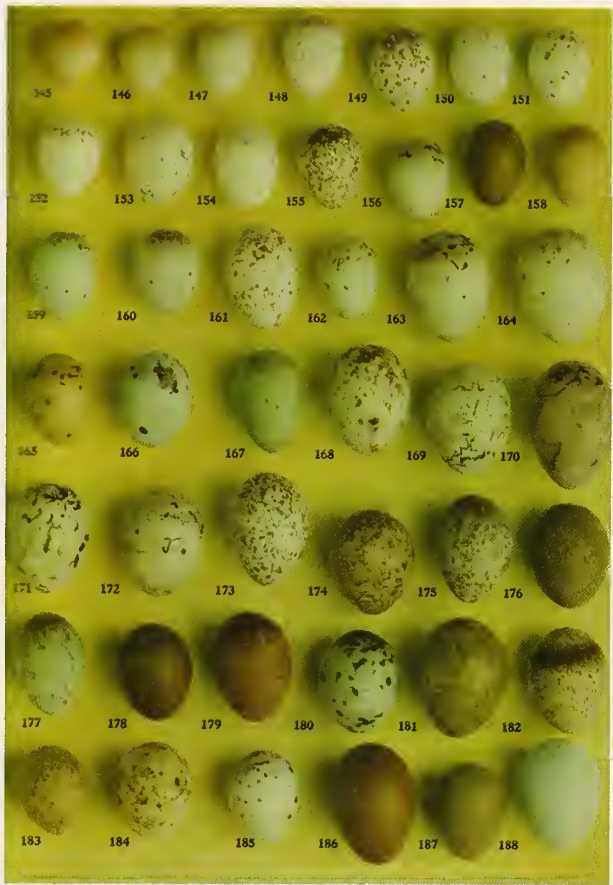


Fig. 1. Plate showing some of the diversity of passerine eggs. Note especially the concentration of speckling at the crown of the egg, forming a distinct corona ring in many (e.g. Wood Lark *Lullula arborea*, 182). Reproduced from Hoeher, S. (1974), *The Pocket Encyclopaedia of Birds' Eggs and Nesting Habitats*, Blandford Press, London.

this condition indication is a function of the pigment is unclear (Moreno & Osorno 2003). Interestingly, blue eggs seem to be especially common in species with complex mating systems, which supports the view that they might have a signalling role (Soler *et al.* 2005).

But these explanations (crypsis, cuckoos, sexual selection) are unconvincing in respect of the most-frequently encountered pattern found in passerines (and indeed in many non-passerines), and especially small passerines, throughout the world, in both tropical and temperate regions. This pattern consists of a small, plain white egg speckled with reddish spots, typically forming a ring around the blunt end of the egg – a 'corona ring' surrounding the 'crown' of the egg. Such eggs are seen in species covering a great range of taxonomic and ecological situations (for example, in Britain alone



169. The author, checking nestboxes in the Wytham Woods study area, Oxfordshire.

there are tits (Paridae), nuthatches (Sittidae), treecreepers (Certhiidae), wrens (Troglodytidae), swallows (Hirundinidae), warblers (Sylviidae) and some finches (Fringillidae)), in hole-nesters and open-nesters, in resident and migrant species, in insectivores and granivores, and in cuckoo hosts and species not parasitised by cuckoos.

Sources of variation in eggshells

In the late 1980s, while inspecting hundreds of Great Tit nests, year after year in Wytham Woods, near Oxford, I began to wonder what might be the purpose of these pigment speckles. At that time, the only convincing explanations for eggshell pigmentation on the eggs of *any* species were either crypsis or to make them mimic host eggs, i.e. to avoid predators or to avoid them being detected by cuckoos, respectively. So it was natural to try to fit all eggshell pigmentation into one or other of these paradigms. But tit eggs clearly do not fit. Although many ornithologists have tried (Lack 1968), and even still try, nobody could argue convincingly that the small reddish marks on tit eggs made them less conspicuous in the nest. Sir Alfred Newton had considered this back in 1896, and

rejected the notion (citing Hewitson 1838) saying:

'In regard to the almost countless cases of spotted eggs in holes... the only supposition... would be that the species... have taken to hiding their treasures in times comparatively recently, and have not yet got rid of the ancestral habit of secreting and depositing pigment. ...no more can be added on this subject, interesting as it is, and worthy of much more investigation than it has received.'

This was, of course, pure speculation and given that it would seem remarkable that so many species, both related and not, would have to be getting 'rid of the ancestral habit' at exactly the same rate, I found this unconvincing. Since nothing *more* convincing had been published on the subject since then, I decided, in 1988, to accept Newton's 100-year-old challenge and try to work out for myself what was going on. This paper presents some of the results of that decision.

It turned out that there were a number of good reasons for studying this subject in the Great Tit. One, practical, reason was already apparent: I was working within the context of the long-term Great Tit population study in Wytham Woods. Here, several hundred pairs of Great Tits, most of the local population, nest in nestboxes (of which there are about 1,000 in an area of woodland some 3.6 km² in extent). This means that the birds' nests are readily accessible, and because the parents and their chicks are ringed as part of the long-term study, we are able to follow many generations of Great Tits within family lineages and ask, for example, whether the egg that a female lays is similar to the one from which she had hatched, or indeed the one from which her mother (or indeed father) had hatched.

This species was also very suitable for more theoretical reasons. The Great Tit is, of course, a hole-nester which lays one egg each day until its large clutch (typically about nine eggs in Wytham) is complete. Only then does the female incubate, although some late nesters may start incubating up to three days before the last egg is laid. The eggs are laid early in the morning, whereupon the female leaves the nest for the day. Before she leaves, she covers the eggs with moss or nest lining. This may serve to reduce evaporative water loss, but it seems

equally likely that it makes the eggs less conspicuous to any passing predator that comes across the nest hole. If this latter explanation is correct, it seems that the female herself doesn't appear to 'think' that her eggs are cryptic. Furthermore, the Great Tit is not a Cuckoo host, and neither does it generally dump eggs in other Great Tits' nests. So it is unlikely that the markings serve to identify the eggs, since the female does not have much need to be able to distinguish her own eggs. In fact, experiments with dummy eggs (Davies & Brooke 1989a,b) or which involve swapping eggs between nests (Pettifor *et al.* 1988; Gosler 1993) indicate that Great Tits are not good (in fact they seem to be hopeless) at spotting alien eggs in their nests; they will sit on pretty much anything you put in the nest once incubation has started. So the speckles on Great Tit eggs presented a real mystery.

Having looked at thousands of Great Tit clutches over the years, three things struck me about their speckles. First, I was pretty certain that the first egg was usually less marked than later eggs, but I was unaware as to whether subsequent eggs in a clutch varied in pigmentation in any systematic way. Second, it was clear that there was huge variation within the Wytham Great Tit population, with some birds laying immaculate (pure white) or very lightly speckled eggs, while others laid heavily dark-spotted eggs, but I was unaware of any particular geographical factor that might be causing that variation. Third, there was that 'corona' ring – what was the significance of that? It was possible to conceive of a system that might produce such a pattern, but for what purpose? Again I had no idea that this might reflect an engineering problem for the egg, and in fact my conceptual 'model' of eggshell pigmentation didn't help. Like most people, I had assumed that the bird made an egg, encased it in a shell, and then put spots on it – what we might call the 'inkjet printer' model. Indeed, we are led to that course of reasoning by the standard description of how bunting (Emberizidae) eggs get their streaks (e.g. Newton 1896, p.186): i.e. by the egg rotating in the eggshell gland while pigment is applied (I wonder whether that is

actually correct – do we *really* know?). I later realised that it was inconceivable that such a model would be able to produce the patterns that colleagues, students and I had discovered, and which I shall describe shortly.

So, having obtained a feel for the variation in speckling over a number of years, in 1988 I invented a simple method of scoring the spot patterns. With a little practice, I found that I could assess the average score for a clutch in a few seconds and even interpolate 'half' scores (e.g. 2.5, 3.5) repeatably. The scoring system is based on the recognition that there were really three aspects to the variation that I saw among clutches. This became known as the 'IDS' system because eggshells varied in pigment intensity (I), from white (score 0) or lightly spotted (score 1), to very dark-spotted (score 5); they varied in pigment distribution (D), from all spots concentrated at one (usually the broad) end (score 1) to evenly spotted all over the egg (score 5); and they varied in spot size (S), from small (score 1) to large (score 5). A series of sketches in the back of my notebook (fig. 2) each year helped me to maintain consistency in the general scoring method from one year to the next, and rescored clutches (blind – i.e. not referring back to previous scores) during incubation, allowed me to assess my consistency of recording – the 'repeatability' of the scores. Then from 1988 onwards, I scored every clutch in the 300 nestboxes that I monitor (about 60–150 Great Tit clutches each year).

I have now recorded the patterns on more than 1,500 clutches in this way. Since it turns out that the three scores are somewhat corre-



170. Incubating Great Tit *Parus major*, Wytham Woods, Oxfordshire.

Andy Gosler

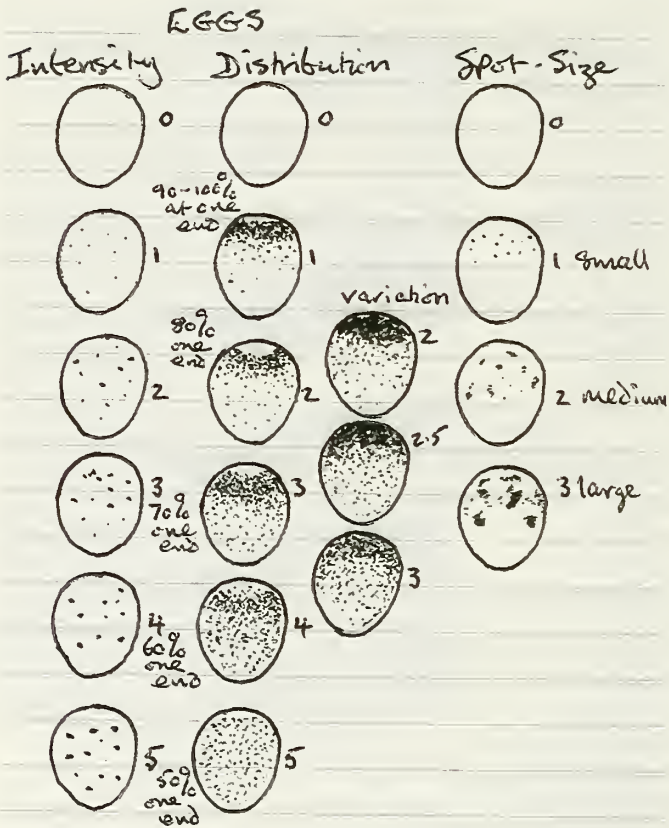


Fig. 2. Back page from author's 2002 field notebook, showing egg sketch diagrams used to maintain consistency in scoring 'IDS' (Intensity, Distribution and Spread – see text) across years.

lated (i.e. eggs with darker spots also tend to have larger spots more concentrated at one end, while paler speckles tend to be more evenly distributed), I also calculated two statistics (Principal components pc1 and pc2) that summarise the variation. These summary statistics have turned out to be very informative, and I called them 'darkness' (pc1) and 'spread' (pc2), as this most nearly expresses what they represent in terms of the eggshell's pattern (Gosler *et al.* 2000, 2005).

So what can we do with data of this kind? The first thing was to check on my repeatability from several scores made of the same clutches on different days, and then to test the repeatability of known (ringed) females in different years, and to see if it made any difference whether they were in the same box or a different box, or with the same male or a different male. In this way, I could see whether females were consistent in the patterns of eggs they laid, and start to get an idea of whether the environ-

ment affected the patterns. For example, if females laid eggs that were more similar in pattern when they nested in the same box than when in different boxes, there must be an environmental effect. Using the extensive ringing data from the Wytham Great Tit project, which allow us to find relatives, I also collated the egg-pattern data for mothers and daughters and for maternal and paternal grandmothers, to see whether there was evidence for a genetic basis to these eggshell patterns.

What I found (Gosler *et al.* 2000) was, first, that observer repeatabilities were tolerably high; eggs that I considered pale or spotty one week were regarded as more or less equally pale or spotty (respectively) the next (table 1). In fact, part of the difference was probably caused by the change in egg appearance between when they were fresh, and partially translucent (pinkish), and when incubated, when the developing embryo renders

them opaque (the white shell appears whiter and the speckling appears more contrasting). Although there was little 'box effect' or 'male effect' (i.e. a female's egg-pattern was not influenced by who she was mated with), there was a strong 'female effect', meaning that individual females were highly consistent in their eggshell patterns over the years. I was later to find that the result for the 'box effect' was somewhat misleading because when a given female changed boxes between years, she tended to stay in the same general area or even territory, so that key environmental effects (such as the food available to her) did not change as much as if she had moved to another part of the wood. The higher repeatabilities for females recorded over consecutive years reflects the fact that they are more likely to nest in the same nestbox.

Then I looked at the similarities of eggs between descendant relatives. Female Great Tits laid eggs that were essentially similar to those from which they had hatched a year or two

Table 1. Great Tit *Parus major* eggshell pigment pattern repeatabilities represented as percentages; for example, if all females laid identical eggs, irrespective of where or with whom (different males), the score would be 100%. Thus box repeatability is the effect of nestbox location on the egg trait.

I = Intensity of eggshell pigment, D = Distribution of spots, S = Spot size (see text). Source: Gosler *et al.* (2000).

Group	I	D	S	No. clutches
Observer	77%	87%	76%	192
Box (different pairs)	4%	0%	0%	312
Male (different females)	10%	0%	7%	142
Female (different males)	66%	49%	52%	362
Females (all years)	67%	46%	54%	551
Females (consecutive years)	76%	58%	57%	162

Table 2. Summary of Great Tit *Parus major* eggshell pigment-pattern similarities between relatives (heritability). I = Intensity, D = Distribution, S = Spot size (see text). Note that while the darkness of the eggshell pigmentation appears partly to have a genetic basis, the spread seems not to, i.e. the origin of the variation must be environmental. Similarity between relatives' egg-patterns: none –, moderate *, strong **, very strong ***. Source: Gosler *et al.* (2000).

Relatives	I	D	S	Darkness	Spread
Daughter/mother	***	**	*	***	–
Daughter/maternal grandmother	**	*	**	**	–
Daughter/paternal grandmother	–	–	–	–	–

earlier (table 2). But more interesting than this, they were also similar to the eggs from which their mothers had hatched (i.e. the maternal grandmother's egg), but totally unlike the ones from which their fathers had hatched (the paternal grandmother's egg). These results have a number of interesting and important implications. First, they provide evidence that there is some genetic basis for the eggshell patterns. Second, and perhaps more interesting, is the fact that whatever genes the female carries that are relevant to this process, they are not inherited from the male, because if they were, there should be some resemblance between a female's eggs and those of her *paternal* grandmother: the nearest egg-laying ancestor on the male's lineage. Since in birds (unlike mammals) there is a female sex-specific chromosome (W, females being ZW), the opposite of the situation in mammals (including humans), in which there is a male-specific chromosome (Y, males being XY), this finding suggested that in birds the genes for the eggshell-speckling system are on the female's W chromosome (it is unlikely that the Great Tit has a unique system of genetic determination for eggshell speckling!). That this might be so had been suggested many years earlier in relation to Common Cuckoos (Punnett 1933) because, if otherwise, it is difficult to see how the host-specific genes could be maintained as distinct genetic lineages. If this

were not so, the genes for laying, say, Reed Warbler *Acrocephalus scirpaceus*-type eggs, would be 'diluted' over time because male Cuckoos are not thought to be choosy about whom they mate with, at least not in terms of what host species raised their mate. Hence my study of Wytham Great Tit eggs seemed to be confirming what had long been suspected for cuckoos (for logistic reasons it would be pretty-well impossible to do such a study with cuckoos themselves), and also indicating that, if both cuckoos and tits had such a system, it must surely be widespread in birds.

The function of eggshells and their pigments

Interesting though all of this was, it went no way towards explaining why the pigments were there. In seeking an answer to that question, I never doubted that the explanation would be adaptive, i.e. the spots would have some function, and serve some purpose. They were not random (for example they form a ring), and however elusive that purpose might be, it would be intimately tied to the specific functions of the eggshell. So what are those functions? The eggshell provides a semi-permeable barrier between the aqueous, internal environment that the chick requires to grow and develop, and the relatively dry (potentially desiccating) environment of the outside world. It allows gas exchange (oxygen in, carbon dioxide and water

out) but must prevent excessive water loss. It maintains the egg's internal environment with a stable shape; and presents a barrier to pathogens: bacteria, viruses and fungal attack. It may also protect the egg by camouflaging it. So the eggshell has many structural functions, and it was entirely possible that pigments served some function completely unrelated to their appearance.

It was at about this time that I started discussing eggshells with a colleague, Jim Reynolds, who was working on the problems that small birds face in finding enough calcium for breeding, principally because of the large amounts of calcium carbonate required for the formation of eggshells. Part of the problem is one of scale. Although for a large bird the egg is relatively small compared with its body size (for a chicken, the egg is about 3% of body weight), for a small bird the eggs are relatively large (10% of body weight for a Great Tit). This means that while large birds can accumulate calcium over a relatively long period within the skeleton, to be drawn as required for eggshell

formation (Sugiyama & Kusuhara 2001), a small bird cannot; it must seek calcium daily during egg formation. Much of the research on birds' eggs involves chickens, and Jim had read Prof. Sally Solomon's work at Glasgow (Solomon 1987, 1997), which suggested that brown hens' eggs might be stronger than white. Solomon had studied protoporphyrins and commented that, like the eggshells themselves, they had a semi-crystalline structure. As they were similar in structure to phthalocyanin dyes, which were also used as lubricants in engineering, she wondered whether they might act like solid-state lubricants (e.g. like putting pencil graphite on a metal zip to make it run smoothly) between the calcite crystals of the shell. Such a lubricant might then act as a shock absorber within the shell, and so make the shell more resilient to impact, and thus stronger.

We were intrigued by this, and by the implication that if pigment strengthened eggshell, then perhaps localised pigment (spots) might compensate for local flaws in eggshell structure by strengthening the shell in those places. What

might cause such flaws? Given Jim's interest in calcium metabolism, and knowing that Great Tit females have to spend a lot of their time during egg formation looking for calcium, in the form of small snails (Gastropoda), to form eggshell (Graveland *et al.* 1994; Graveland & Berends 1997; Graveland & Drent 1997), it was obvious to think about calcium deficiency. Perhaps the variation in pigmentation that I had found within Wytham reflected variation in calcium availability.

For years, I had had mixed feelings about the 100-m altitude difference between the top and bottom of my 100-ha study area on the north side of Wytham hill. But I was about to discover that it was a blessing! The reason for the elevation, indeed the reason that the hill exists at all, is because it

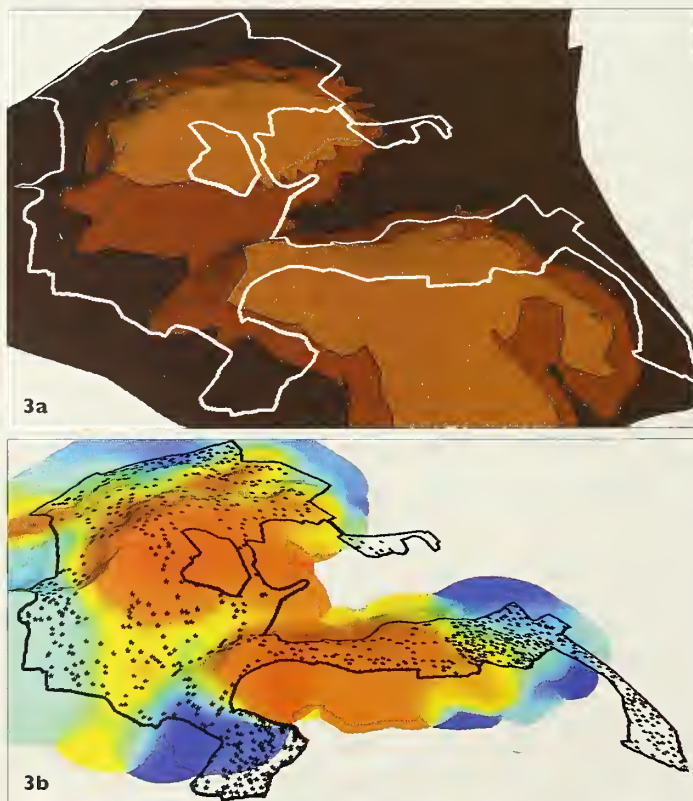


Fig. 3. GIS plots of Wytham Woods, Oxfordshire (from south). 3a shows main soils: clay (dark red), sands (light red) and limestone soils (brown). 3b shows interpolated soil calcium content from low (blue) to high (red).

is capped by Jurassic Corallian limestone. This rock is harder and more resistant to erosion than the sands that lie below it, and the clays that form the Thames floodplain beneath those, and which are exposed to the north of Wytham. Thanks to another colleague, Robin McCleery, I was able to obtain the soil survey data for Wytham, which included analysis results for the soils' calcium content sampled on a regular grid in 1974 by the Commonwealth Forestry Institute, Oxford University.

The soil survey figures showed that while soils on the limestone contained up to 27% calcium, those at the bottom of the hill could contain as little as 0.065%, which is actually less than is found in the average peat-bog. So there was something like a 415-fold range of variation in soil calcium in my study area. To see whether eggshell pigmentation might be related to calcium availability, I averaged the pigment scores for all clutches I'd recorded over the years for each nestbox, and plotted that against the average calcium value for the four or five soil samples taken nearest to that nestbox (fig. 4). Although soil calcium explained only about 4% of the variation among nestboxes in pigment darkness, the relationship was significant statistically ($P = 0.021$). Given how much 'noise' there must be in this analysis, and that we already knew that a large part of the variation among females had a genetic basis, this was an amazing, and very exciting result; from hunch to supporting evidence in a few clicks of a mouse – a real (if small in the great scheme of things) eureka moment! Clutches on high-calcium soils were in fact paler, less spotted, than those on low-calcium soils. A snail survey has subsequently shown that there are substantially more, and larger, snails on the limestone than on the sands and clays (Jubb *et al.* 2006), and this is undoubtedly how the soil effect is translated into a bird-eggshell effect.

It is worth considering for a moment just how important to this discovery,

and what follows, were the specific geographical details of our study site. It is pure serendipity that the Wytham estate presents such a range of soil conditions. Had I worked in any one of dozens of other tit study-populations across Europe that lie on relatively uniform geology and soils, I should have seen less variation in eggshell patterning, and certainly could not have ascribed what variation I did see to the diversity of the local environment. In other words, in this case, our ability to figure out what was going on depended on the environment in which we worked.

So this analysis suggested that pigments might indeed be related to eggshell function, in some way related to calcium availability. We assumed that this must be related to shell thickness, but to test that we would have to collect some eggs. Another aspect of eggshell function that is affected strongly by eggshell thickness is the rate of water loss from the egg, especially during incubation. Birds' eggs typically lose about 18% of their weight through incubation as a result of water loss. This is a consequence of the normal physiology of the egg and the growing embryo within it. However, the eggshell is the only obstacle to total desiccation: too thick, and gas and water-vapour loss are too restricted; too thin, and water is lost too rapidly.

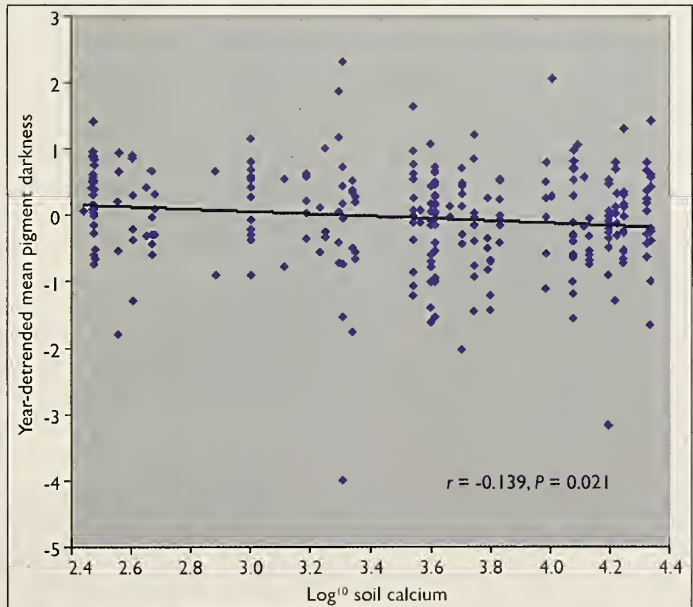


Fig. 4. The relationship between Great Tit *Parus major* eggshell pigment darkness and local soil calcium in the north Wytham study area. Each point represents a nestbox for which its value is the average of several clutches over 12 years (data from some 1,400 clutches and 267 nestboxes are represented in the figure). The correlation between them is statistically highly significant.

Either way, the embryo would die (Ar *et al.* 1974, 1979). Bakken *et al.* (1978) showed that protoporphyrins had another interesting characteristic: they reflected strongly in the infrared, i.e. they reflect heat. Bakken and colleagues were interested in why the eggs of ground-nesting species such as gulls (Laridae) didn't literally roast in hot sunshine when the parent bird was off the nest for any length of time. But if protoporphyrins prevented gull eggs from frying in the sun, maybe they could act to reduce the rate of water loss from the (supposedly) thinner shells of more spotted eggs. In 2002, I offered this question in the form of an MSc project in the Oxford University Zoology Department. The idea was to weigh eggs individually during incubation to monitor the rates of water loss, and to see whether this was reduced by the presence of pigment. At that time, we still believed that pigment was deposited on the surface of the eggshell after its formation (the 'inkjet model'), whereupon it might physically block pores in the eggshell, and so reduce water loss; however, what we found then, and over the next three breeding seasons radically altered our view.

James Higham took up the challenge of the MSc project, and he knew that we were still in the early stages of working out what was going on. The field was wide open and, wisely, he was going to make no assumptions. We agreed that we should not weigh whole clutches repeatedly, but individual eggs; and that we should know which egg was which in the laying sequence because we believed that if females were calcium-stressed, they might find it harder to find calcium for the eggshell as egg-laying progressed over 6–12 days. So we (mostly James) visited 30 nests, chosen for their location with respect to soil calcium, every day to number the day's eggs. Each egg was weighed repeatedly during incubation using a digital balance that weighed reliably to 0.002g in the field. My main job at this time was to record pigment score (IDS) for every egg in these clutches. This was

when we made the first discovery. James noticed it first: the eggs became spottier through the clutch (fig. 5). This was obvious to us visually when the eggs were laid out in sequence, but the IDS scores confirmed it absolutely (Gosler *et al.* 2005).

At this point, it seemed that we might be right about the reduction in shell thickness through the clutch, but we knew that to nail this one properly we would have to collect eggs. I obtained licences from English Nature to take, over two years, some fresh (unincubated) eggs for analysis and any deserted (unincubated) clutches that later became available. For the fresh eggs, we made a point of taking them in such a way that the female continued to lay, and in fact all the females whose eggs were taken later raised and fledged broods of their own in the same season. I would add at this point, that although it might seem that our regular nest-checks were quite intrusive to the birds, this was not actually the case. During the laying period, females rarely visit the nest after they have laid the day's egg, so the daily visits to number eggs could be made without risk of encountering their mother. Two visits made during incubation were sufficiently infrequent to prevent desertion and indeed no birds deserted the nest as a result of these nest visits.

From the collected eggs, we discovered a number of important things, of which five are listed here. Together, these have led to a radical rethink of how eggshell pigmentation works. First, the eggshell thickness is not constant across the surface of the egg. In particular, the thickest shell is found at the broad end of the egg (the 'crown'), while the next thickest is the region (the 'waist') between the widest point and the pointed end (the 'foot'). The small 'foot' region has the thinnest shell, but between the crown and the waist there is a band of relatively thin shell. This corresponds, more or less, both to the broadest part of the egg (the 'shoulder') and to the region in which the pigment corona, when it occurs, is found. Second, within each



Fig. 5. Variation in eggshell pigmentation through the laying sequence of a clutch of nine Great Tit *Parus major* eggs from Wytham Woods in 2002.

region (crown, shoulder, waist, foot), the shell is thinner, sometimes substantially so (up to 50%), within a pigment spot than it is immediately outside the pigment spot. In other words, the pigment marks 'pits' or regions of thinner shell. Third, the pigment darkness is related to the difference in thickness between the pigmented and unpigmented shell (the depth of 'pit'), so darker spots mark out deeper pitting of the shell surface, and a more spotted eggshell is a less consistent eggshell in terms of thickness. This is also interesting because the long-term data showed that there was a strong genetic basis to pigment darkness, so also suggesting that there might be a genetic basis to how consistently the female can form the eggshell. Fourth, the pigment spread was strongly related to the shell thickness at the shoulder (less so at the crown, and not at all at waist or foot), such that thinner-shelled eggs had pigment more concentrated towards the blunt end of the egg. Fifth, after reducing the shell to ash at 800°C for 8 hours in a laboratory furnace to drive off any organic compounds, and correcting for egg size, we found that the total shell mass was strongly related to the soil calcium values near to the nest (Gosler *et al.* 2005).

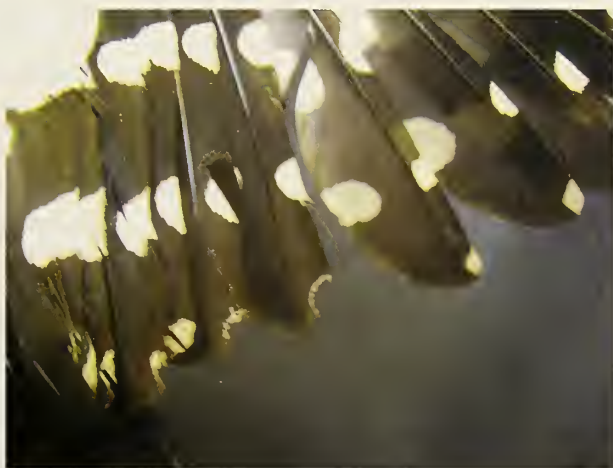
So there we had it in terms of the structural relationships between the eggshell and its pigmentation. Birds nesting in lower-calcium areas laid more heavily pigmented eggs because they were thinner-shelled, and the spots corresponded to thin areas of shell. But the 'inkjet model' now seemed ridiculous. How could the female bird possibly make an eggshell and then find the thin-shelled places to put pigment on them? Clearly there is a more sophisticated mechanism operating here. Our data suggest that at some fine, maybe cellular, scale, a shortage of calcium results in protoporphyrin being deposited instead. Solomon (1997) pointed out in her work on chickens that these pigments were deposited with the calcium carbonate as an integrated unit, and even suggested that the protoporphyrins and calcium might share the same protein carrier to cross the cell membrane. It now looks as though that might be right and that while this carrier 'prefers' calcium, it might take protoporphyrin instead when the former is scarce.



Andy Gosler

171. The importance of snail (*Gastropoda*) shell to the laying female is highlighted by the contents of this Great Tit *Parus major* nest in Wytham on 1st June 2006: two unhatched eggs and a large piece of snail shell. The latter was almost certainly taken into the nest by the female for her own consumption.

That birds use pigments to strengthen tissues is of course well established. Birders, and especially bird ringers, will be familiar with the fact that light-coloured tips to feathers wear more readily than feathers or feather areas darkly pigmented with melanin. Plate 172 shows an example of feather-tip wear in a Great Spotted Woodpecker *Dendrocopos major*, photographed in spring, in which it is clear that the pale spots on the tips of the outer secondaries



Andy Gosler

172. Great Spotted Woodpecker *Dendrocopos major* wing showing feather weakness of pale spots at tips of secondaries.

have worn more than the darker feather vane. Two similar examples are perhaps more familiar. Many otherwise pure-white species nevertheless have black primaries, for example Northern Gannet *Morus bassanus* and Snow Goose *Anser caerulescens*. Many finch, bunting and sparrow species show, especially in the males, buff tips to body feathers when they are fresh in the autumn. This makes them more cryptic and displays fewer sexual signals at an inappropriate time of year. These pale, less resilient, tips wear away through the winter to reveal the full breeding plumage in familiar species such as House Sparrow *Passer domesticus*, Common Chaffinch *Fringilla coelebs*, Brambling *F. montifringilla* and Reed Bunting *Emberiza schoeniclus*.

Pigment and water relations of eggshells

So what of the water-loss studies that James Higham was working on? It turned out that there was indeed a relationship between the rate of water loss and the egg's pigment darkness, but this relationship was far from simple, because it actually changed through the laying sequence of the clutch. So although in later eggs in the sequence (generally after about the sixth egg) the rate of water loss was reduced in darker eggs, in early eggs (especially the first two or three) in the sequence, darker eggs actually lost more water. Furthermore, all this interacted with the local calcium availability so that on low-calcium soils darker eggs in a clutch tended to lose less water, while the reverse was the case on high-calcium soils (Higham & Gosler in press). I have to say that we struggled for months to work out what might be going on here, but the answer surely lies in relation to our other findings.

Our thoughts now run something like this. We believe that the primary function of the protoporphyrins is to compensate, in terms of strength, for eggshell thinning caused by calcium deficiency. They can also help to reduce the permeability of the eggshell, and thus also water loss. However, while they might be a good solution to the first (primary) problem, they are not a perfect solution to the second. The actual mechanism by which pigment is deposited as a result of localised calcium deficiency suggests that the bird cannot apply more pigment than that which is directly proportional to the calcium shortage, but that might not be enough to compensate perfectly for shell-thinning in

terms of water loss. So, generally, lightly spotted eggs (early in the laying sequence, or on high-calcium soils) carry enough pigment to compensate in terms of strength for small areas of eggshell-thinning, but not enough to compensate in terms of water loss, while heavy pigmentation can compensate for both (Higham & Gosler in press).

But these findings suggested something else. The idea that protoporphyrins might represent a good adaptive solution to the problem of shell strength, but a less-than-perfect one for the problem of water loss, seemed to me less remarkable than would be the finding that the one compound offered a perfect solution to both problems. But if the pigment system was in fact a compromise, maybe incubating females had to adapt their incubation behaviour to compensate for the fact that a combination of factors outside their control resulted in a clutch of eggs with not-quite-perfectly adapted properties in terms of their heat transmission and water conductance.

With this question in mind, James Higham designed and executed an experiment in 2002, which I repeated in 2003 to increase the sample size, to test the proposition that the incubation environment of a nest was in some way related to the eggshell pigmentation of the clutch (fig. 6). If this were the case, the rate of water loss from eggs would be specific not just to the clutch, but to the female incubating it. So the solution to test this would be to weigh each of the eggs in a clutch and to swap these for a few days during incubation with similarly weighed eggs in another nest, more or less matched for size and timing (clutch size, lay date and estimated hatch date). We would then swap them back and reweigh each of the eggs to determine their rate of water loss while they were incubated by another female, who probably had a different incubation regime. We could then see whether the difference in water loss between the swapped eggs and their siblings (controls) left in the original nest was correlated with the difference in mean pigment darkness between the two nests in the pair. We also placed temperature probes, recording temperature to 0.1°C every minute, in the nest cups of a few of the nests to see if we could detect any differences.

What we found was really remarkable (fig. 7). There was a strong correlation between the difference in weight loss between swapped and control eggs, and the difference in darkness

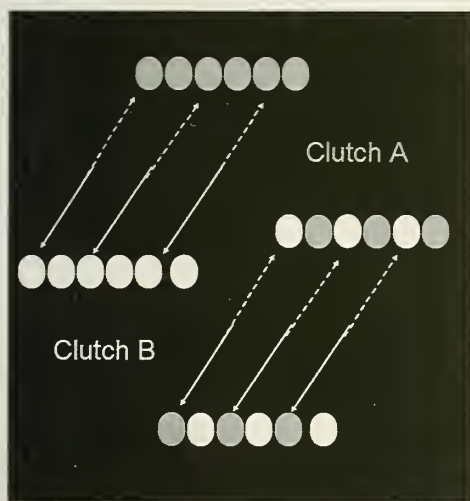


Fig. 6. Experimental design for partial clutch swaps during incubation. Clutches A and B each have six eggs. Swaps were conducted so that swap and control eggs were not biased relative to the laying sequence. Before swapping, and after replacement, eggs were individually weighed to 0.002 g. The mean weight of swapped eggs was compared with that of controls, and the difference plotted against the difference in mean pigment darkness between the two clutches. See fig. 7.

between the two clutches. But more than that, in both years, the line showing the 'best-fit' relationship to the data passed through the origin, indicating that nests with identically pigmented eggs would have identical incubation environments. This confirmed the suspicion that differences in incubation environment between nests, which are determined chiefly by the female's behaviour (e.g. time spent on or off the nest), were related to the pigmentation of her clutch. From the two pairs of nests that we were able to monitor with temperature probes, we found evidence that females incubating darker clutches maintained higher temperatures in the nest, but while this is as we should predict, it is too small a sample on which to base a definitive statement.

What all this means is that we should think of the bird sitting on her eggs in the nest as a highly integrated 'unit'. The nest is built by the female to certain specifications, eggs are constructed so as to compensate for local environmental conditions, and the female's incubation behaviour is supremely adapted to compensate for remaining deficiencies in the whole system. How the female might achieve this fine-tuning awaits further research, but my guess would be that she monitors nest-cup humidity – too

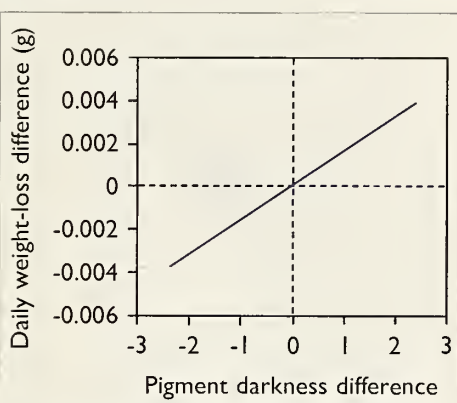


Fig. 7. Summarised results of cross-fostering experiment showing that the rate of weight loss experienced by Great Tit *Parus major* eggs during incubation depends on the specific nest environment, and that this in turn depends on the pigmentation of the clutch. See text and fig. 6 for further explanation.

much and she stands in the nest to reduce the heat to the eggs.

Further adaptation?

There is one further aspect to this tale, concerning the function of these pigments as a structural adaptation for the eggshell, and it has to do with the fact that the shell at the shoulder is thinner than that at the crown or waist. There is some reason to think that this might be a design constraint. That is, that for some reason it is difficult to produce the perfectly ovoid shape of the egg while maintaining a constant shell thickness. The evidence for this is that the difference (or ratio) in thickness between the shoulder and crown shell is itself correlated with the length-to-breadth ratio of the whole egg: the nearer this ratio is to 1 (i.e. a perfect sphere), the nearer the shoulder:crown shell-thickness ratio was to 1 (i.e. the same thickness). But there might be an adaptive reason also why the shoulder shell is thinner, indeed maybe the egg is 'ovoid' in order to produce this reduction in shell thickness in one latitude (recognised as the shoulder) of the egg. Note that this thinning is true of unpigmented shell, it is not just that the corona ring spotting is found there, and these spots mark thinner shell. The adaptive function then comes from the fact that the region of the shoulder and corona ring is also where the chick hatches. Some weakening of the shell in this region may help the tiny chick to break out.

In fact, we can go further in thinking about

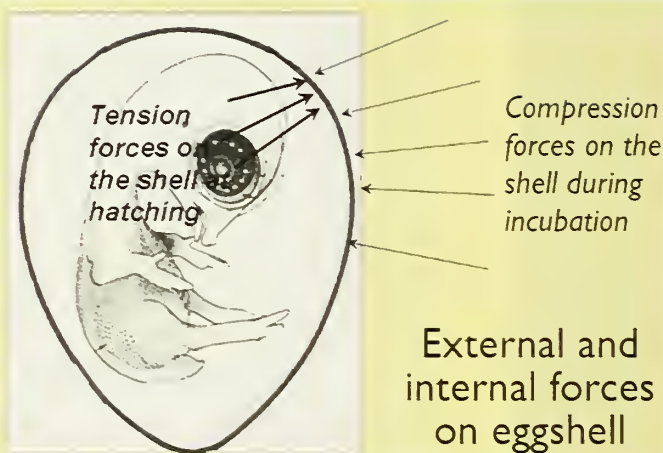


Fig. 8. Opposing compression and tension forces on the 'arch' of the eggshell. The arch analogy might be misleading because the crystalline 'bricks' of this arch are extremely fine-grained; but this may serve as a useful starting

this. We can think of the broad end of an egg as being structurally similar to an arch, and we can think of the forces acting on either side of the shell (outside and inside), as being like the forces acting upon an arch (fig. 8). An archway holds together because of the compression forces of masonry above it forcing it together. From outside the egg, the forces acting upon the shell are, similarly, compression forces. A weak arch can be demolished by removing a single brick, especially if punched out from beneath it, because this action applies a tension force that opposes the compression force. Similarly, the hatching chick applies a kind of tension force to the arch of the egg at hatching. Here the 'lubricating crystals' of the protoporphyrins could have an additional benefit, because the very compounds (pigment) that act as an intercrystalline shock absorber when under compression from without, should act to weaken the shell when under tension from within, so aiding the chick's liberation.

Summing up

We had always assumed that any pattern on an egg was a signal, i.e. that its purpose was principally visual. Since, in the cases for which the purpose of markings was known (chiefly waders and cuckoos) that purpose was visual, we assumed that the function of all spots, when found, would also be some sort of signal. Indeed, the very word 'pigment' implies such a function. From discussions that I have had with ornithologists and behavioural ecologists, I have the impression that many will continue to make

that assumption despite our findings. It is not inconceivable that, since the pigmentation we have studied can be used to indicate eggshell quality, birds might use the markings as some sort of signal. But this is not the principal reason. It is like suggesting that the reason that blood is red is so that you know when you are bleeding, so ignoring the principal function of haemoglobin in oxygen transport! Following this analogy for a moment, I would offer another, more specific to these eggshells.

Considering these specific pigments in terms of the visible patterns they display without considering their structural function is like looking at the reticulate pattern formed on a wall by the mortar between the bricks and thinking 'I wonder why the builder put that pattern there'. Our evidence suggests that the protoporphyrins are a very sophisticated mortar holding together the calcite 'bricks' of the eggshell wall. Any pattern they produce is secondary to that.

Nonetheless, there are almost certainly other things going on concerning the ground colour of eggshells. For a start, their genetic determination may be different (there is a male genetic component to eggshell colours of chickens, brown versus white), and again there can be no doubt that the eggs of certain, generally ground-nesting, species are highly cryptic, or that there are gentes of Common Cuckoos whose eggs are adapted in colour to certain specific passerine hosts.

So where do we go from here? There is much to do, but I believe that these findings offer insight and opportunities in many areas. First, we need to find out how general are our findings. About 60% of bird species are passerines, and perhaps 30%–50% of these have spotted eggs like those of the Great Tit, or similarly speckled but with a ground colour. If it turns out that eggshell thickness, and thickness consistency (i.e. quality) can be deduced from their spottiness (i.e. without breaking them), we have a powerful tool for both pure and applied research in ornithology. For example, we know that man-made pollutants such as DDT still persist in the

environment and that they cause eggshell thinning in birds. Might eggshell pigmentation provide a means to assess the effects of such pollutants by simply photographing the eggs?

Finally, I should like to return to the quote from Sir Alfred Newton's 1896 *Dictionary of Birds* with which I started this account. Nineteenth-century ornithology was overwhelmingly preoccupied with systematics (naming and classifying), and that was right given that new species were being discovered almost weekly in the newly opening lands of the Empire. Newton's account of eggs (about 5,400 words over 11 pages) is largely concerned with the inability of ornithologists to find any general taxonomic value in eggshell patterning. Indeed, if you've ever tried to identify an egg from a book, without having seen the source (bird or nest), it often seems near impossible. There are certainly general themes (e.g. take a look at the plates of warbler eggs in *BWP*), but the overwhelming functional constraints on eggs mean that they are highly conservative or convergent in form. For this reason, the answer to the challenge that Newton posed, over 100 years ago, is likely to be both complex and fascinating, but maybe worth the wait.

Acknowledgments

I hope that my account of this work indicates that I have benefited greatly from discussion and input from many people. I am grateful to them all: to colleagues Rhys Green, Robin McCleery, Jim Reynolds, Jorn Scharlemann and Steve Wyatt; students Phil Barnett, James Higham, Morgan Tingley and Teddy Wilkin; and especially to Chris Perrins and Ben Sheldon, former and current Directors of the EGI respectively, who have, variously, supported my exploits in Wytham Woods since 1981. Teddy Wilkin kindly supplied the GIS maps shown in fig. 3.

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Short-billed Dowitcher in Northeast Scotland: new to Britain

ABSTRACT Although Short-billed Dowitcher *Limnodromus griseus* had previously been on the British List, the species was removed by the BOURC in 1992. A better understanding of dowitcher identification criteria became established in the 1980s, and it was apparent that all previous British records were either Long-billed Dowitchers *L. scolopaceus* or lacked sufficient detail to separate the two species convincingly. Consequently, the discovery of a long-staying and well-watched juvenile Short-billed Dowitcher at Rosehearty, Northeast Scotland, on 11th September 1999, resulted in the species being re-admitted to the British List.

On Saturday 11th September 1999, C. Barton, P. Crockett and I. Gordon were looking for a Pectoral Sandpiper *Calidris melanotos* which had been reported at Rosehearty, Northeast Scotland, when they found a dowitcher *Limnodromus* on the beach. Viewing conditions were far from ideal and a detailed examination of the bird was not possible, but from the views they obtained, it appeared to be a Long-billed Dowitcher *Limnodromus scolopaceus* and when the news was put out the bird's identity was given as such. As the bird was still present the following day, I began to think about going to see it. That evening, I phoned Paul Baxter to discuss recent bird sightings and the conversation came round to the subject of the Rosehearty dowitcher, which Paul had seen that day. After some discussion, he mentioned a slight uneasiness about the tertial pattern: on the one hand there seemed to be some internal markings within the borders of these feathers but, on the other hand, some reference books illustrated variability in the tertial patterning of juvenile Long-billed that might account for this. At this stage, however, no serious doubts were being voiced and, apparently, it had been heard to give the characteristic call of Long-billed Dowitcher.

Just three weeks earlier, in Nova Scotia, Canada, I had spent some time scrutinising

juvenile Short-billed Dowitchers *L. griseus*. On some individuals, the diagnostic tertial markings were not always obvious unless seen well at close range, and I found that the patterning on the inner greater coverts could be more useful. I decided that the Aberdeenshire bird was certainly going to be worth a look, at least as a useful 'experience bird'. Along with James Smith, who also had experience of both North American dowitcher species, I arrived at Rosehearty beach in the late morning on 13th September. Initially, there was no sign of the dowitcher but after about 30 minutes of searching I located it about 150 m away, feeding at the eastern end of the beach among some rock pools and seaweed. Light conditions were poor, with overcast skies, a strong breeze and threatening rain, but even at this distance, the distinctly capped appearance reminded me of the birds I had been watching in Nova Scotia just a few weeks previously. Cautiously, we edged closer and, by the time we had halved the distance between the bird and ourselves, it was beginning to look most interesting.

At this distance, through telescopes, we could both see that the tertials were well-marked, with an internal pattern exactly as Short-billed would be expected to show, and this was also the case with the patterning on the inner greater coverts and lower scapulars. By

now, excitement was setting in; this surely had to be a juvenile Short-billed Dowitcher! Being aware of the enormity of the observation, i.e. a first for Britain in northern Scotland, and the effect it would have on the birding community, we set about putting together a watertight, feather-by-feather case.

Often the dowitcher would be out of view, hidden behind rocks or piles of seaweed, or would be flushed by dogs and walkers and, on one occasion, by a Great Skua *Stercorarius skua*, so we spent what seemed like long periods just trying to relocate the bird. Typically, it would feed in the intertidal zone: around washed-up seaweed at the rocky edge of the beach, on the beach itself, or along the tideline. It was regularly accompanied by Common Redshanks *Tringa totanus*, and at high tide it roosted with Oystercatchers *Haematopus ostralegus* and Common Redshanks on rocks at the eastern end of the beach. Gradually, as the light conditions improved, we established that all the plumage features fitted Short-billed Dowitcher, that Long-billed could be confidently eliminated, and although we had not heard it call, we were both in no doubt that this was a Short-billed.

I put the news out to local birders and to Birdline Scotland, and by late afternoon, between 20 and 30 birdwatchers had arrived. It was only then that the dowitcher decided to

leave the beach and fly to the harbour at nearby Rosehearty, where it posed brilliantly, just 20 m away in perfect light, giving everyone superb views, by far the best that it had shown all day. At 17.25 hrs, just before we left, the bird flew a short distance and gave a trisyllabic call, very reminiscent of Turnstone *Arenaria interpres*. This was the classic Short-billed Dowitcher call and established the final link in the identification chain, neatly rounding off a fantastic day.

Fortunately, this megastar took up residence for two weeks, allowing many birders, probably over a thousand in all, to travel from all over Britain to watch and photograph it. James and I returned on 24th September, which turned out to be the last day of its stay. Amazingly, the same bird, identified by the two missing tertials on the right wing, was found in Cleveland on 29th September, where it remained in the Greenabella Marsh and Greatham Creek area until at least 30th October, and provided a second opportunity for those who missed it the first time around.

Description

The long, straight bill, plump body and shortish olive-green legs, the overall shape and structure reminiscent of a snipe *Gallinago* soon identified the bird as a dowitcher, while the characteristic pattern of the wing-coverts and tertials made ageing the bird as a juvenile equally straightforward.



173. Juvenile Short-billed Dowitcher *Limnodromus griseus*, Rosehearty, Northeast Scotland, September 1999.

Steve Young/Birdwatch

ward. In flight, the prominent white wedge extending up the rump and lower back from the base of the tail could be seen, as well as a whitish trailing edge to the wings. Making the final identification as Short-billed Dowitcher was based on the following features:

Tertial pattern

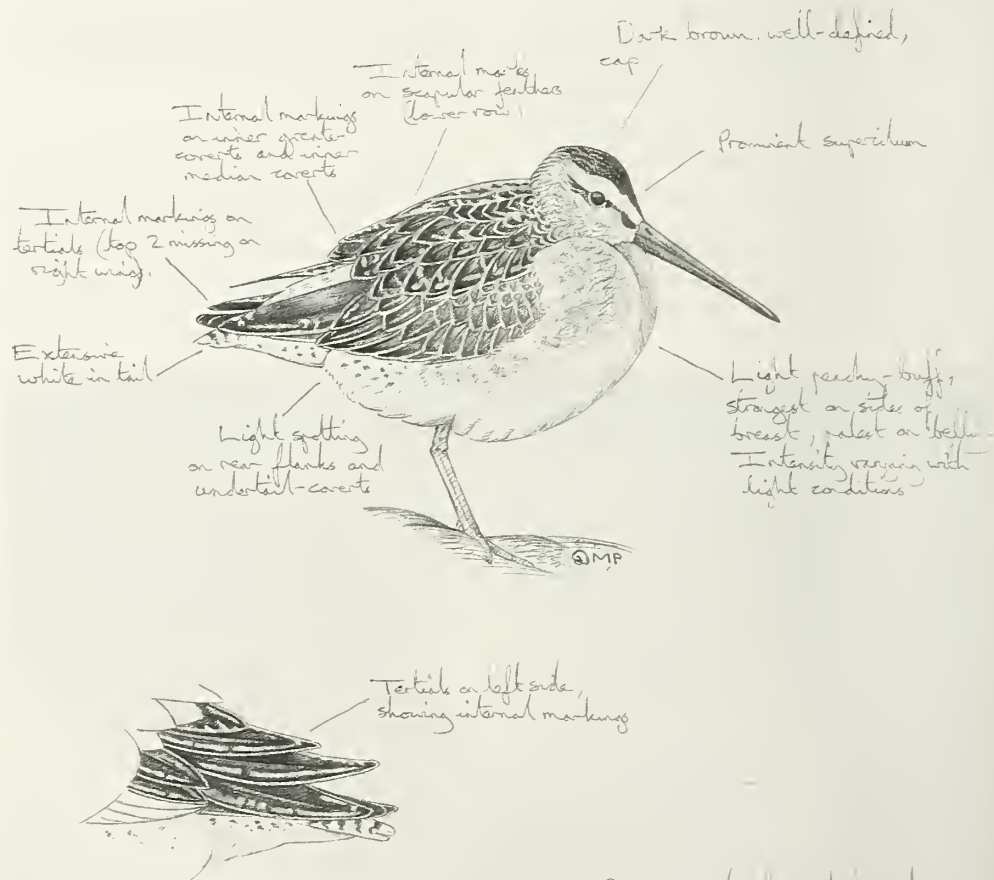
The two innermost tertials on the right wing were missing, leaving the inner web of the longest tertial exposed, which created a misleading impression of a large, unmarked, plain grey tertial area. Fortunately, the longest tertial on the right-hand side and all the tertials on the left side were intact and showed a classic pattern characteristic of juvenile Short-billed Dowitcher.

Each tertial was dark brownish-grey, darker towards the tip and bordered by a thin, pale and

slightly uneven buff fringe. Within each feather was a broader, richer buff 'sub-border'. This 'sub-border' ran parallel to the entire length of the outer web of the feather and hooked round into about a third of the inner web. It was slightly wavy and broken in parts, forming dots on the inner edge and towards the base of the outer edge. This was clearly defined and formed a pattern not found in any variation of juvenile Long-billed.

Inner greater coverts

The three innermost greater coverts showed markings similar to the tertial pattern. Against a dark background, an uneven golden-buff 'sub-border' ran parallel to the narrow outer border and, as on the tertials, was broken in parts. Again, this pattern would not be found on juvenile Long-billed.



Drawing made from photographs, sketches and notes to show some of main identification features

Fig. 1. Juvenile Short-billed Dowitcher *Limnodromus griseus*, Rosehearty, Northeast Scotland, September 1999.



Steve Young/Birdwatch

174. Juvenile Short-billed Dowitcher *Limnodromus griseus*, Rosehearty, Northeast Scotland, September 1999.

Inner median coverts

The internal patterning to the two innermost median coverts resembled that of the inner greater coverts but appeared fainter. A few of the inner lesser coverts also showed faint internal markings.

Crown

A dark brown or dark rufous cap (reminiscent of that shown by Sharp-tailed Sandpiper *C. acuminata*) was well defined above the supercilium and fairly obvious, even at a distance. It never appeared grey.

Supercilium

Conspicuously broad and white in front of the eye, and continuing over and behind the eye, where it was duller and streaked.

Underparts

The breast, flanks and belly had a strong peachy tone, probably with less grey than would be the case with Long-billed. The rear flanks and undertail-coverts were spotted with dark brown, possibly more delicately than on Long-billed, which may show more in the way of blotches and bars.

Tail pattern

In general, the white bars tended to look at least as broad as the dark bars, and certainly not sig-

nificantly narrower, although this was quite a difficult feature to judge. The tail was broadly tipped white and the overall impression of the whole tail area was of a lot of white.

Call

Only definitely heard to call twice in about five hours of observation, although the bird was quite distant for some of this time. On 13th September, it gave a fairly quiet call in flight, comprising three syllables and very like the flight call of Turnstone. On 24th September, it was again heard calling once in flight. At the time, I noted this as being 'very Turnstone-like, three rolling syllables chu-du-du'.

A chequered British history

Prior to 1950, it was not appreciated that two species of dowitcher existed in North America, such is their similarity, and the two were known as 'Red-breasted Snipe *L. griseus*' on both sides of the Atlantic (Witherby *et al.* 1940; see Editorial Comment, below). Once it became clear that 'Red-breasted Snipe' encompassed two species, both were added to the British List in the 1950s, although there was little understanding of the features that could be used to separate them. Consequently, Hollom (1975), commenting on Short-billed, noted that 'several of them, and more recent records, are referred to this species', while for Long-billed, he stated

that 'The majority, however, probably refer to Long-billed ...'. Such was the confusion!

Gradually, as reliable identification criteria for separating Short-billed and Long-billed Dowitchers became established in the 1980s, it was apparent that most claims of Short-billed fell short of the mark. The last records – a bird at Cley, Norfolk, in October and November 1957, shortly before the formation of BBRC, and three old specimen records dating from 1862, 1872 and 1902 – fell during a BOURC review in 1991 and, as a result, Short-billed Dowitcher was finally removed from the British List in 1992.

With the new criteria established, it was thought to be only a matter of time before an unequivocal Short-billed Dowitcher would occur. In fact, the wait was soon over when, in autumn 1985, a juvenile Short-billed Dowitcher was found at Tacumshin, Co. Wexford, where it stayed from 30th September until 2nd October. This became the first modern record to meet the revised criteria and it was accepted as the first record for Britain & Ireland. Here it remained until the British and Irish Lists were separated, and Short-billed Dowitcher was, once again, removed from the British List. Unlike Long-billed Dowitcher, Short-billed has

proved to be a real rarity on this side of the North Atlantic and since the Rosehearty bird, there have been no further British records.

Distribution and migration

Three races of Short-billed Dowitcher breed in the taiga forest bogs of North America. The nominate race breeds in northern Quebec and Labrador, Canada, to the east of Hudson Bay, and migrates along the Atlantic seaboard of Canada and the USA to wintering areas in the Caribbean and northern South America. To the west, the race *hendersoni* breeds in Canada to the west of Hudson Bay and migrates throughout eastern North America to wintering areas along the Atlantic coast from North Carolina, USA, south to the Gulf of Mexico. The third form, *caurinus*, breeds in southern Alaska and migrates primarily to the west of the Rocky Mountains and along the Pacific coast. This form winters from southern California, USA, south to Ecuador. Unlike the other two races, *caurinus* has not been recorded with certainty from the Atlantic seaboard (Paulson 2005).

Although the racial identity of the Rosehearty bird has not been established, it seems that either *griseus* or *hendersoni* would be the most likely to occur in Europe.



175. Juvenile Short-billed Dowitcher *Limnodromus griseus*, Rosehearty, Northeast Scotland, September 1999.

Weather conditions and associated occurrences

As ever, the process of linking the likely arrival scenario of one particular vagrant to a volatile weather pattern remains difficult, and many assumptions must be made. If it is assumed that the dowitcher had arrived recently in Scotland when it was first discovered, then weather conditions over the North Atlantic suggest that it probably made landfall on 10th September, after being caught up in a particularly mobile weather situation that developed over eastern Canada and rapidly crossed the North Atlantic. If the bird departed from breeding grounds in eastern Canada on 8th September and migrated to the southeast, this would have taken it into a strengthening airflow associated with a depression developing over the St Lawrence region. This depression sped quickly east across the Atlantic beneath a powerful jet stream. It is likely that upper wind speeds beneath this jet stream varied from 75 to 95 km/h at an altitude of 2–3 km, which is the height used by most long-distance migrant waders. Adding to this, the bird would maintain a downwind flight speed of around 55 km/h, suggesting it was possibly travelling at something like 130–150 km/h. At all times during this scenario, satellite images showed a band of thick cloud associated with the jet stream, and the wind at this altitude would have been westerly, backing southwesterly off Ireland, to bring the bird into western Scotland on 10th September.

The first ten days of September 1999 brought a significant influx of North American shorebirds to western Scotland, including an unprecedented influx of at least 12 Semi-

palmed Sandpipers *C. pusilla*, including eight on North and South Uist, Western Isles, plus a further two on Tiree and two on Islay, both Argyll. In addition, two White-rumped Sandpipers *C. fuscicollis* were found on South Uist and a Baird's Sandpiper *C. bairdii* on North Uist, while St Kilda recorded two American Golden Plovers *Pluvialis dominica*, a White-rumped Sandpiper and three Baird's Sandpipers during this period (Rogers 2000). In addition, 1999 proved to be the second-best year for Pectoral Sandpipers in Britain (at the time it was the best on record), with 66 individuals recorded in the first three weeks of September (Fraser & Rogers 2001, 2006). Notably, this included 12 on 12th September alone, with records spread from Cornwall and Sussex, north to the Western Isles and Northeast Scotland.

Acknowledgments

I would like to thank James P. Smith for sharing in the identification and Norman Elkins for providing a useful summary of the weather events leading up to the discovery of the Short-billed Dowitcher.

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EDITORIAL COMMENT Bob McGowan, Chairman of the British Ornithologists' Union Records Committee commented: 'The history of Short-billed and Long-billed Dowitchers is one of the most complex for any "species pair" in Britain. Although now recognised as distinct species, there was formerly considerable confusion regarding the status and origins of the short-billed and long-billed forms. In the first half of the twentieth century they were viewed as conspecific by the AOU and BOU, and named 'Red-breasted Snipe' *Limnodromus griseus*, comprising two races, *griseus* and *scolopaceus*. In 1932, Rowan described a third taxon, *hendersoni* (*Auk* 49: 14–35) and was the first to postulate that 'Red-breasted Snipe' may comprise more than one species. Further elucidation by Pitelka in 1950 (*Univ. Calif. Publ. Zool.* 50: 1–108), along with the description of a fourth taxon, *caurinus*, led to the formal adoption of two species by the AOU in 1957.

'In 1952, the BOU published the fourth edition of the *Check-list of the Birds of Great Britain and Ireland*, which stated that 'Red-breasted Snipe' had occurred in Britain on 27 occasions. Bannerman (*Birds of the British Isles*, 1961) adopted the split and stated that all *specimens* had been identified as *griseus* from eastern America, and also that there was apparently no record of *scolopaceus* from Europe.

Perhaps Bannerman was misled by the distributions and migrations of the species; counter-intuitively, it is *scolopaceus*, breeding mainly in eastern Siberia and Alaska, which is the likelier vagrant to Britain, owing to its tendency to migrate eastwards in autumn.

In 1961, Pitelka (*Brit. Birds* 54: 340–342) identified British-taken specimens at the NHM, London, as two *griseus* and one *scolopaceus*, the latter a juvenile from Devon, probably in 1801. In a companion paper, Nisbet (*Brit. Birds* 54: 343–356) systematically reviewed all dowitcher records from the British Isles and presented detailed field identification criteria which indicated that species identification was theoretically possible in favourable circumstances.

Nevertheless, identification to species was a significant challenge; of 76 or more dowitchers recorded in Britain by 1968, the majority were 'dowitcher sp.' and only six were identified as Short-billed (*Status of Birds in Britain and Ireland*, 1971). Two post-1958 records were rejected in a BBRC review (*Brit. Birds* 74: 471). The remaining four were reviewed by BOURC in 1991 and, as the documentation for all was found to be unsatisfactory, Short-billed Dowitcher was deleted from the British List (*Ibis* 134: 212). Tantalisingly, though, one record existed for Ireland – a juvenile observed at Tacumshin from 30th September to 2nd October 1985.

With juvenile Short-billed Dowitchers being easier to identify to species, compared with adults, owing to the distinctive 'tiger' markings on the tertials, every juvenile occurring in Britain was closely scrutinised by the finders as the elusive 'first' was sought. As there had been a total of 158 records of Long-billed to 1999, the odds did not appear to be in the observers' favour. Dave Pullan, however, felt that the dowitcher at Rosehearty merited a closer look in view of his recent experience with Short-billed in Nova Scotia. Focusing his attention particularly on the tertial pattern, he quickly realised that this individual showed the classic *L. griseus* pattern, and the rest is history.

Following acceptance by BBRC, the record was assessed by BOURC in 2000. The well-documented and illustrated report and the accompanying photographs left no doubt that this was a Short-billed Dowitcher. Although an attempt at subspecific identification was attempted, differentiation of juvenile plumages across the three taxa is fraught with difficulty and no conclusions were drawn. As escape potential was negligible for this species, the record was unanimously accepted.

'The rediscovery of this particular individual in Cleveland just five days after its departure from Rosehearty is particularly noteworthy, and testament to the wide ornithological coverage and expertise that exist in Britain.'

Colin Bradshaw, Chairman of the British Birds Rarities Committee, said: 'After many false starts, it is a pleasure to have a Short-billed Dowitcher on the British List. Fresh-plumaged juvenile birds are probably the easiest to separate from Long-billed but, even in this plumage, there are some birds that can be problematic (such as the bird at Leighton Moss, Lancashire, in 1998, which is discussed at length in *Birdwatch* 92: 22–24 (see also *Birdwatch* 94: 13)). In general, the most obvious features are the call and the internal markings to the tertials, scapulars and inner greater coverts. There are, however, numerous other, more subtle features to both shape and plumage that give it a different 'jizz' from Long-billed in all plumages. These have recently been discussed in depth by Cin-Ty Lee and Andrew Birch, and their article, together with numerous photo illustrations can be found on the *Surfbirds* website at www.surfbirds.com/ID%20Articles/dowitchers1005/dowitchers.html

White-throated Robin on Skokholm:

new to Britain

David Thelwell



David Thelwell

Fig. 1

ABSTRACT In their recently published summary of new birds recorded in Britain since 1980, Pitches & Cleaves (*Birds New to Britain: 1980–2004*, Poyser, 2005) commented that no published account exists of the occurrence of a female White-throated Robin *Irania gutturalis* on Skokholm, Pembrokeshire, in May 1990. Although the record has been accepted by BBRC and photographs have been published, no further details have appeared in *British Birds*. This short article summarises details of the record.

On 26th May 1990, I joined a small group of would-be wildlife artists, led by Peter Partington, at the jetty at Martins-haven, Pembrokeshire, to take the short ferry ride to the island of Skokholm. Shortly after breakfast on 27th May, our first morning on the

island, I emerged from the dining hall and walked towards the cottage, which has a small walled garden and one of the few significant trees on Skokholm. As I did so, a small bird dropped from the tree onto the ground. As passerines are not particularly numerous on the

island, I immediately looked at it through my binoculars, and was surprised to see a bird that I could not put a name to. It was the size of a small thrush (Turdidae) and was hopping on the ground with an upright stance and cocked tail. Its size, large dark eye and plain underparts gave it an appearance reminiscent of a Common Nightingale *Luscinia megarhynchos*. It was clearly a chat or small thrush species with which I was totally unfamiliar and it definitely looked like something very interesting! I attracted the attention of some of the other members of the group who had appeared after breakfast, including Michael Betts, the Warden, and Jack Donovan. We were all perplexed by its appearance and uncertain what species it was. Fortunately, a copy of *BWP* was close at hand, and careful inspection revealed that we were looking at a female White-throated Robin!

We were obviously excited by this great rarity and spent some time observing the bird and making detailed notes and sketches. Jack Donovan, Margaret Potts and Michael Wallen

took some good photos (*Brit. Birds* 83: plate 295; Betts 1990; Vinicombe & Cottridge 1996; Mitchell & Young 1997; Palmer 2000), but the record has not been properly documented until now. Being a chat, it was very obliging and spent long periods feeding on the ground, perched on branches and sitting on fences and stone walls.

My notes made at the time give the following description:

Large robust chat, size of small thrush, with heavy body and drooping wings. Frequently fed on the ground and occasionally cocked tail. Small slim head, large dark eye, pale eye-ringing and throat, pale eye-stripe in front of eye, brownish ear-coverts, grey breast-band, blue-grey back, rump and wings with dark brown primaries, black tail (slightly notched), warm buff-orange flanks, cream undertail-coverts. Bill and legs black.

Although a few other observers came to see the bird, the news was not released by the Warden owing to the fragile nature of the



Fig. 2

Figs. 1–4. Field sketches and finished drawings of the Skokholm White-throated Robin *Irania gutturalis*.

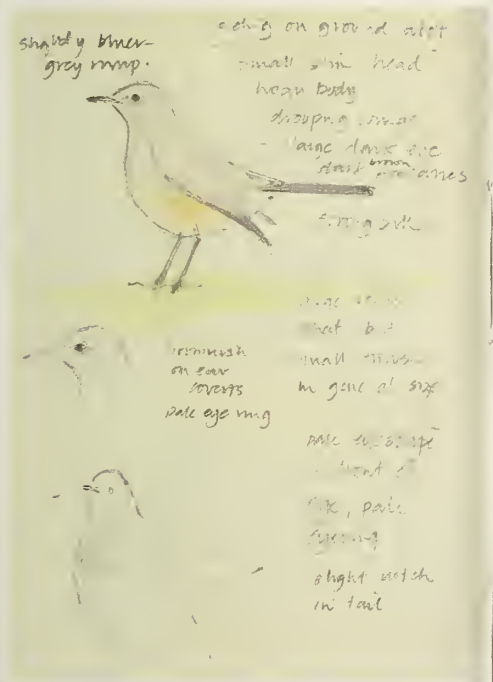


Fig. 3

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island, which is honeycombed with the burrows of tens of thousands of Manx Shearwaters *Puffinus puffinus*. The White-throated Robin remained on the island for four days and was last seen on 30th May. The weather at the time of the bird's arrival was warm, dry and settled, and a few other migrants recorded on the island during this time included a male Golden Oriole *Oriolus oriolus*.

After finding the robin, I had the honour of being asked to immortalise it on the toilet wall, alongside paintings of other island rarities as portrayed by their finders! According to Jo Harvard, the present Warden, these paintings remain a fascinating (and humorous) record of the key Skokholm rarities.

An earlier record of White-throated Robin in Britain concerned a male on the Calf of Man on 22nd June 1983 (del Nevo 1994). Although BBRC review and publish records from the island, the Isle of Man is actually a British Crown Dependency and does not form a part of Great Britain. Consequently, birds recorded from the Isle of Man fall outside the jurisdiction of the BOU and do not form a part of the British List. The Skokholm bird consequently becomes the first British record of White-throated Robin and there have been no subsequent British records.

Distribution and movements

The breeding range of White-throated Robin extends across much of south-central Asia, from southern Turkey east through northern Iraq and central Iran to western Afghanistan and the western Tien Shan Mountains in eastern Kazakhstan. In autumn, migrants cross the Arabian Peninsula to enter Africa through Eritrea and Ethiopia. From here, they move south, passing through Kenya, where it is one of the more numerous species trapped for ringing at Ngulia, Tsavo National Park, in November and December, before reaching wintering areas in southern Kenya and Tanzania. Return passage commences in April and is believed to follow a similar route (Keith *et al.* 1992). Consequently, birds breeding towards the western limit of the range are likely to migrate out of Africa towards the northeast before reorientating to the northwest. It is presumably these individuals, which then overshoot their breeding range, which account for the steadily increasing number of spring records in western Europe.

Prior to the Calf of Man bird in 1983, there had been four White-throated Robins recorded in western Europe: singles in Sweden in June–July 1971, on 14th May 1977 and on 10th May 1981, and in Norway on 15th May 1981. Subsequently, there were singles in Sweden on 10th May 1986 and on 16th–20th May 1989, one

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Fig. 4

in The Netherlands on 3rd–4th November 1986, and one in Norway on 17th August 1989. Since the Skokholm bird in 1990, there have been further records, including the first for Switzerland on 25th May 2000, and the species has now occurred in Sweden on no fewer than eight occasions. The majority have been in spring, between mid May and the end of June, but there have been three further autumn records: in Sweden on 9th August 1995, and in The Netherlands on 30th August 2003 and 31st October 2005.

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EDITORIAL COMMENT Bob McGowan, Chairman of the British Ornithologists' Union Records Committee, commented: 'Prior to 1999, the only British record of White-throated Robin assessed by BOURC was the male bird that appeared in June 1983 on the Isle of Man.

'Overlooked at the time was the fact that records from the Isle of Man do not form part of the British List, and the Skokholm bird in May 1990 subsequently became the first British occurrence. Details were circulated in April 2006 and identification as a female White-throated Robin was unanimous; since there is minimal escape potential recognised for the species, it was accepted to Category A. The pale tips on the primary coverts visible in one published image (Betts 1990; Cottridge & Vinicombe 1996) indicate that it was a first-summer bird.'

Colin Bradshaw, Chairman of the British Birds Rarities Committee, commented: 'Identifying female White-throated Robin is not that difficult once you have got over the shock of seeing something so unexpected. The size and shape, black tail, rusty flanks and sullied underparts mean that there is no obvious confusion species.'

Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the BB Editorial Board. Those considered appropriate for BB will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Greylag Goose nesting in pine tree

On 14th May 2005, I was shown the nest of a Greylag Goose *Anser anser* in a pine *Pinus* tree in Kent. I was able to observe the nest from a window in a first-floor flat in Brasted, adjacent to the busy A25, looking 40 m across communal

grounds to the 20-m-high tree. The goose was sitting along a branch of the pine, only about 1–2 m from the top (plate 176). It was impossible to see what was under the sitting bird, and there was no sign of an old nest, but I assume that there must have been some sort of platform for the goose to lay on/in. The nearest water to the site is 1 km to the northwest.

On 20th May, the parent bird flew down to the lawn and honked encouragement at the young. They immediately left the nest one after the other, bouncing down through the branches; five of the six survived. The young became separated from the parent in the enclosed grounds, and were eventually gathered up and transported to Sevenoaks Wildfowl Reserve.

BWP states: '[nest] on ground, often sheltered hollow, or at base of tree, under bush or in reedbed, also on rafts of vegetation in rivers... of 463 nests in Czechoslovakia... 19.7% in pollarded willows [*Salix*]... rarely more than 10 m from water and then only on islands.' Eddie Chapman (*in litt.*) has commented that there are records from Norway and other European countries of Greylags nesting in pines. There have been other records in *BB* concerning Greylag Geese nesting in trees (for example *Brit. Birds* 95: 189), but this seems an extraordinary nest-site.



176. Nest-site of Greylag Goose *Anser anser*, Brasted, Kent, May 2005.

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Does the Honey-buzzard feed during migration?

There are two distinct feeding strategies among long-distance migrant raptors: some species hunt during their migration, while others store fat before migrating. In the latter group, individuals require fat deposition amounting to 15–25% of lean body mass for their migration (Gessaman 1979; Smith *et al.* 1986; Candler & Kennedy 1995). Some authors suggest that, in soaring raptors like the Honey-buzzard *Pernis apivorus*, weight loss during migration optimises the use of thermal currents (Brown

quoted by Gensbøl 1992). Conversely, raptors which use mostly powered flight (e.g. Osprey *Pandion haliaetus*, kites *Milvus* and harriers *Circus*) usually feed during migration (Cramp & Simmons 1980; Kerlinger 1989; Gensbøl 1992; Blanco 1994, 1997; Yosef 1996; Alerstam & Hedenström 1998). Smith *et al.* (1986) estimated that 'although 100 g of fat would sustain a soaring Broad-winged Hawk *Buteo platypterus* for more than 20 days, powered flight would exhaust this fuel reserve in less than five days.'

In the central Mediterranean region, several species of Accipitriformes are regularly observed feeding during both spring and autumn migration. In particular, Black Kites *M. migrans*, Marsh *C. aeruginosus*, Montagu's *C. pygargus* and Pallid Harriers *C. macrourus* were observed hunting over many small islands at the Strait of Messina and other sites in Italy (Giordano *et al.* 1995; Agostini & Logozzo 1998; Agostini & Panuccio 2003; Pandolfi & Sonet 2003; Panuccio *et al.* 2004; Premuda *et al.* 2004; pers. obs.). Among soaring raptors, Short-toed Eagles *Circus gallicus* were observed hunting over the island of Marettimo during autumn migration (Agostini pers. obs.). In the case of the Honey-buzzard, birds are regularly seen drinking while on migration in the Middle East, although at present there is no evidence that this species feeds during migration (Gensbøl 1992; Yosef 1996; Hake *et al.* 2003).

Passage of Honey-buzzards along the Calabrian Apennines, southern continental Italy, is well documented (see Agostini & Logozzo 1997). In autumn 2005, 3,458 Honey-buzzards were noted between 24th August and 12th September 2005. Close observations revealed that 15 birds showed a full crop and, of these, 11 were adults. Nine of the 15 (60%) were observed on 26th August. Two individuals with distended crops were photographed (plate 177). Only those individuals that were extremely close (<100 m) could be checked with confidence, so many others with a full crop may have passed undetected. Visual observation of crop distension is evidence of recent food ingestion (Shelley & Benz 1985; Pandolfi & Sonet 2003), so we suggest that hungry or opportunistic Honey-buzzards occasionally feed during migration, even if the majority fast in an attempt to minimise migration time and optimise the use of thermal currents. It is interesting to note that during observations at Hawk Mountain Sanctuary (Pennsylvania, USA), Shelley & Benz (1985) reported 8% of 623 Broad-winged Hawks with distended crops and 25 individuals in active hunting.



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177. Honey-buzzard *Pernis apivorus* with distended crop, Calabrian Apennines, southern Italy, August 2006.

Acknowledgments

We wish to thank Elena Grasso, Patricia Molina and Michael Dech for their help during observations.

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Comments on the roosting behaviour of Marsh Harriers during migration

Marsh Harriers *Circus aeruginosus* migrate across a broad front during both spring and autumn migration, and regularly undertake long powered flights over water, sometimes using islands as stopover sites (Cramp & Simmons 1980; Agostini & Logozzo 1998; Agostini *et al.* 2001, 2003; Panuccio *et al.* 2002; Sammut 2005). Although they are capable of migrating across the sea at night, many migrating Marsh Harriers appear to suspend migration when faced with a water barrier in the afternoon, electing instead to hunt before roosting at dusk (Panuccio *et al.* 2002; Agostini & Panuccio 2003).

Migrating raptors most commonly select trees in which to roost, and in areas where woodland is scarce are often attracted to small clumps of trees (Kerlinger 1989). Marsh Harriers usually roost among rank ground vegeta-

tion during the winter and breeding season (Cramp & Simmons 1980), but we have regularly observed migrant Marsh Harriers roosting in trees in the central Mediterranean region. Since many other migrant raptors roost in trees, it is perhaps not unexpected that Marsh Harriers should also do so. On Malta, up to 200 Marsh Harriers have roosted at Buskett (a small wooded area where hunting is banned) in recent years (Sammut 2005), while on Marettimo, Agostini & Logozzo (1998) reported a flock of 100 roosting in trees on 28th March 1998. On 1st April 2002, a flock of 50 landed in the only wood on the island of Ustica, while five were seen roosting on the rocks along the shore there in March 2002. During autumn migration, observations at Circeo Promontory, central Italy, revealed at least 150 Marsh Harriers roosting in trees on 13th September 2002,

despite the close proximity of a large wetland area in a protected National Park with ample ground-roosting sites (plate 178). We have also observed tree-roosting Marsh Harriers at the Strait of Messina (max. nine in spring 2004); Aspromonte Mountain, southern continental Italy (max. 14 in autumn 2004); Pantelleria, western Sicily (max. 11 in autumn 2002); and Mount Capodarco, central Italy (max. three in spring 2003). Tree species does not appear



178. Circeo National Park, Italy.

to influence the choice of roost site. We have observed Marsh Harriers roosting in Holm Oak *Quercus ilex*, Stone Pine *Pinus pinea*, Austrian Pine *Pinus nigra*, Common Beech *Fagus sylvatica*, Black Poplar *Populus nigra* and Common Ash *Fraxinus excelsior*.

In contrast to Sammut (2005), who concluded that migrant Marsh Harriers roost in trees only as a last resort, when it is the only available safe roost site, we consider that some Marsh Harriers on migration actively select to roost in trees, regardless of whether suitable ground cover is available.

Finally, it is interesting that observations during the winters from 1999/2000 to 2004/05 showed that small numbers of Marsh Harriers regularly roost in trees at the Circeo National Park, central Italy, where large flocks of waterfowl and many Marsh Harriers winter. Within this period, numbers of tree-roosting birds peaked at nine, along with three Hen Harriers

C. cyaneus, in December 1999.

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Hunting technique used by Eurasian Sparrowhawk attempting to catch a Common Swift

On 27th July 2005, I was operating a tractor-driven mower at Holkham NNR, Norfolk, to top thistles (Cardueae) among grassland of the grazing marshes. The mower was often surrounded by about 40 low-flying Common Swifts *Apus apus* – a regular occurrence as the birds eagerly snap up flies and other winged insects that are disturbed from the grass during the mowing operation. About 150 m away, I noticed a male Eurasian Sparrowhawk *Accipiter nisus* fly in from the south, low to the ground, before landing abruptly in a low spot within the marsh. I stopped the tractor to look at the hawk with binoculars and, as it remained in the same area, eventually nestling down into the vegetation with its head held down almost flat with its back, I continued slowly towards it. Coming to within 15 m of the hawk, with a congregation of swifts wheeling around me in all directions, the hawk suddenly shot up at the nearest bird, which had unknowingly passed directly above the hidden predator. In a twisting, turning chase over a distance of about 50 m, covered in a few

seconds, the Sparrowhawk matched the swift's every move, almost grabbing its faster victim. Ultimately, it was simply not agile enough and the swift banked up at a crucial moment and ascended high in the opposite direction to avoid capture.

Newton (*The Sparrowhawk*, Poyser, 1986) noted that Sparrowhawks will hunt small birds by deploying such a technique, particularly in open ground (he terms it 'still-hunting') but does not mention swifts as victims in his account. The same author did, however, record Common Swift as a rare prey item of the Sparrowhawk; for a bird renowned for its exceptional speed and agility, the Common Swift might initially seem an unlikely prey species. I wondered whether, in the case described above, the Sparrowhawk had foreseen the situation of the swifts hawking around the tractor and used the low-growing flora as a potential ambush location? Or was it just coincidence that the swifts drew close, and the Sparrowhawk exploited an opportunistic situation?

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Common Tern apparently feeding on oilseed rape

At about 12.00 hrs on 3rd July 2005, while bird-watching at Wilstone Reservoir, Hertfordshire, another birder (unfortunately I did not ask his name) and I witnessed the following unusual behaviour. In a field of oilseed rape *Brassica napus oleifera* adjacent to the reservoir, we saw a Common Tern *Sterna hirundo* repeatedly diving down to the top of the crop, in a manner

similar to that which it would employ to feed over water. The behaviour continued for several minutes, and I can only assume that the bird (probably from the small colony which breeds at College Lake, Buckinghamshire, some 3 km away) may have been picking up insects at the top of the crop 'canopy', although the rape had finished flowering and was in seed.

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Eurasian Nuthatches feeding on Hawthorn berries

The diet of Eurasian Nuthatches *Sitta europaea* is best detailed in BWP (Vol. 7, p. 303), which lists about 20 plant species. However, the berries of our common and widespread Hawthorn *Crataegus monogyna* are not mentioned.

On 4th September 2001, two Nuthatches flew along the tops of a line of Hawthorn trees at my home, within a mature wooded suburb in Sheffield, South Yorkshire. They landed in the

upper outer area of one of the Hawthorns and perched on twigs estimated at 8–10 mm in diameter. They began reaching up and taking and eating berries, swallowing them whole. Each bird took seven or eight berries before flying off.

Interestingly, BWP does mention *Crataegus* as a food plant for Western Rock Nuthatch *Sitta neumayer*, a less obviously arboreal species.

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Magpie foot-paddling

On 18th March 2005, on a mown grass lawn by the Main Building, Cardiff University, I observed a Magpie *Pica pica* foot-paddling. This behaviour continued for about ten minutes, when I counted some 15 bouts of about five seconds' duration, interspersed with several minutes of pecking and walking. Two Lesser Black-backed Gulls *Larus fuscus* were also foot-paddling close by.

Foot-paddling is often exhibited by gulls and waders in order to obtain food. The behaviour, stepping repeatedly in the same location, generates vibrations and encourages earthworms (Oligochaeta) to rise to the surface. Anecdotaly, the vibrations are thought to imitate rain hitting the ground, causing the earthworms to burrow out of the ground. Foot-paddling has been recorded in Common Raven *Corvus corax* (Ewins 1989), but I can find no published refer-

ence to this behaviour in the Magpie.

I suggest that the observed Magpie had been able to learn that the gulls' foot-paddling led to the appearance of food. Foot-paddling in gulls is considered to be an innate behaviour, modified by experience, and is not learnt (Buckley 1966), and the Magpie's behaviour could have been an instinctive one. However, the presence of the two foot-paddling Lesser Black-backs and lack of previous reports of Magpies foot-paddling would seem to suggest that interspecific social learning is possibly the more likely explanation.

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Redpolls at garden feeders

The note by Tom Gladwin concerning Lesser Redpolls *Carduelis cabaret* at garden feeders (*Brit. Birds* 99: 159) prompted a number of responses.

Bob Frost commented that: 'In 1996, I was a member of a Royal Air Force Ornithological Society expedition to the Varangerfjord, Norway. We arrived at Vestre Jakobselv, our base for the first part of the survey, on 28th April. The area was covered with deep snow, and I bought bird seed, and fat balls in string bags, to attract birds to the base camp. One of the first species to arrive at the fat balls was Common Redpoll *C. flammea*; so redpolls have been attracted to food put out by humans for some time.'

In the UK, several readers have reported Lesser Redpolls visiting garden feeders during the 2005/06 winter. Counties from which these sightings were reported (with the food item taken, where specified) include: Cambridgeshire

(niger seed)*; Ceredigion (niger seed and peanuts); Greater Manchester (mixed seed and niger seed); Northamptonshire (niger seed and sunflower hearts); and Worcestershire (niger seed and sunflower hearts). Records marked * include Common Redpolls also.

While it seems that the use of garden feeders by redpolls is a relatively recent development, at least in most parts of the UK, it is apparently now fairly widespread and no longer particularly unusual (and niger seed appears to be the best bet to attract them into your garden). We shall not publish further individual items on this topic unless they are of particular interest.

The following readers responded to Tom Gladwin's note: Jenny Briggs, John Davis, Bob Frost, John Headon, John Le Gassick, Gary Palmer, C. M. Richards and Judith Smith.

Eds

Calls of 'Northern Bullfinches'

In their excellent review of the 'Northern Bullfinch' *Pyrrhula pyrrhula pyrrhula* invasion of autumn 2004, Pennington & Meek (2006) documented that, as well as the many individuals giving the distinctive 'trumpet' call, many Northern Bullfinches gave a call that was similar to that of the British race *P. p. pileata*, the latter call being the one familiar to observers who had experienced previous irruptions of *P. p. pyrrhula*.

The authors were rightly careful to note that it was not possible to state definitively from field observations of unmarked individuals whether the same birds made both the unusual trumpet call and the 'normal' 'peeu' call, recognising the potential for a varied repertoire among individual birds. In this context, the following observations may be relevant.

Between 14th October 2004 and 1st May 2006, I trapped 277 unringed Bullfinches in a rural garden near the village of Nimtofte (56°26'N 10°38'E), in eastern Jutland, Denmark, mostly of the (small) races *europaea/coccinea*, but also 50 individuals of the large *pyrrhula* race (differentiated by consistent size differences; see Fox in press). Birds were caught at more or less weekly intervals using mist-nets, and marked with standard Copen-

hagen Zoological Museum rings and unique colour-ring combinations that permitted identification in the field. Most Bullfinches utter the alarm/contact call on release after ringing, enabling a comparison of call types, including those of subsequent retraps. In 2004/05, of 30 large birds trapped, 25 called on release from first capture, of which 22 gave trumpet calls. Last winter, up until 1st May 2006, of 20 large birds trapped, 19 called on release and 17 of these gave trumpet calls. In 2004/05, seven birds that originally gave the trumpet call were recaptured (one twice), and all gave the same call on release.

Two large individuals which wintered at the site in 2004/05, identified in the field on the basis of the colour-ring combinations, and which gave the trumpet call on release, were observed giving the trumpet call in the field on 12 and 5 occasions respectively, and were never heard to make the normal call. Three of the large birds gave a normal call on release and one of these was subsequently recaptured, when it gave a normal call on release. In 2005/06, six large, trumpeting birds were recaptured, three twice and one thrice and all repeated the trumpet call on every occasion, while two large normal-calling birds were recaptured, one

twice, and both gave the normal call when released.

Of a total of 213 trapped small Bullfinches (of the local form *P. p. coccinea*) for which the call was recorded after release at first capture, in both years combined, 149 called, all with the normal call (14 others were not recorded). Of these, 61 were captured more than once and consistently gave the normal call (two individuals which were recaptured six times in the course of winter 2004/05 did so upon each release).

Overall, including retrapped birds originally caught before 14th October 2004, the handling of 230 *coccinea* Bullfinches on 310 different occasions resulted only in normal calls, and 41 resightings of calling small birds in the field all involved normal calls, there being no record of a trumpet call from this subspecies.

From observations of colour-ringed birds attending the garden feeder and in the immediate environs, it was evident that large birds (including individuals known to utter one or other of both calls) tended to occur together in

a group at the study site, although they did also mix with *coccinea*. Under these circumstances, and in situations where there were no individually recognisable birds, it would be possible to conclude that large individuals could potentially give both calls.

Clearly, these observations do not provide unequivocal evidence that individual birds only utter one of the two types of calls. Nevertheless, they provide circumstantial evidence that marked birds in this study were all consistent in their use of calls (at least under the circumstances reported here) and confirm that those colour-marked individuals making the distinctive 'trumpet' call were never heard to make the normal 'pee-u' call, despite many potential opportunities to witness such an event.

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EDITORIAL COMMENT Mike Pennington and Eric Meek have commented as follows: 'We are very interested to read of Tony Fox's results, which provide some statistical support for our casual field observations. We would reiterate Tony's caveat that this does not *prove* that both calls cannot be made by one individual, but it does suggest that any claim that this is the case should be backed up by strong evidence. Further evidence from stable-isotope analysis has also confirmed our tentative suggestions that birds in the 2004 influx may have come from a wide geographic area (Newton *et al.* in press.), which may help to explain the two different call types.

'What is still a puzzle is why the trumpet call is new to so many observers, especially as Mark Constantine (pers. comm.) has informed us that Bullfinch calls collected by the *Sound Approach* team in Finland in the breeding season are all of the trumpet type. It is difficult to be certain about this, but it seems unlikely that our Finnish correspondents would be completely unaware of the trumpet call unless it was a new phenomenon. It may be that trumpet-callers have only recently started breeding in Finland, perhaps only temporarily following earlier invasion(s). Clearly, more information on the situation in Finland would be welcome.

'Finally, another interesting point to note from Tony Fox's contribution is the abundance of "trumpet" Bullfinches at his site in both 2004/05 and 2005/06. Correspondents in The Netherlands, France, Switzerland and Italy, as well as Denmark, have all informed us that they have had as many trumpet Bullfinches in 2005/06 as they had following the 2004 invasion. The 2005 movement clearly followed a different route from that of 2004, however, as although a few birds were recorded in Sweden in late October, there were, as far as we are aware, relatively few in Scandinavia, while hardly any reached Britain; e.g. the Shetland Bird Club database has records of only 16 individuals in autumn 2005, excluding Fair Isle records, although three of these were definitely giving trumpet calls.'

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Which subspecies of Common Stonechat breeds in coastal Portugal?

In Portugal, Common Stonechat *Saxicola torquatus* is a familiar bird, from coastal regions of the Algarve in the south, through the rolling countryside of the Alentejo and a *terra quente*, the hot land of the interior, right up to the more mountainous regions of the north; the population is estimated to be between 10,000 and 100,000 pairs (Urquhart & Bowley 2002). In addition, large numbers of birds winter in the country, with ringing recoveries including individuals from the UK. Common Stonechats breeding in coastal areas of Portugal have so far been assigned to subspecies *S. t. hibernans*, while those in the interior are assumed to be *S. t. rubicola* (BWP; Urquhart & Bowley 2002), although Vaurie (1959) implied some ambiguity about the subspecies occurring in the country. According to Urquhart (2002), Portugal forms the southern limit to the clinal variation of *hibernans*, with birds from southern Norway and Scotland being darker than the populations from southern England, Brittany and Portugal.

My observations at many localities in Portugal between 2000 and 2005, and also examination of birds trapped at the Tagus estuary, Estremadura, would suggest that caution is needed when identifying Common Stonechats in Portugal to subspecies. Although there is some variation, the breeding population throughout Portugal appears to me to resemble *rubicola*; furthermore, some birds show plumage characteristics which recall 'Siberian Stonechat' *S. t. maurus* and these could cause some identification problems. The similarity between some Common Stonechats and 'Siberian Stonechats' was also discussed by Corso (2001), in relation to Sicilian birds.

Key plumage features of Common Stonechats breeding in Portugal

Male Common Stonechats breeding in Portugal show extensive white on the rump and often on the uppertail-coverts. Some birds show obvious dark markings on a few rump feathers, and some birds have a buff-orange hue to the rump. Many individuals appear to have pure white rumps, but there are often darker bases to the feathers, which can be difficult to see in the field. Thus, the white rump of Portuguese birds

appears to be too extensive when compared with that of *hibernans*, which normally shows a restricted amount of white or none at all. On some individuals, there are paler, greyish feathers on the lower back, recalling 'Siberian Stonechat'. Recent documented observations of *rubicola*-type birds in England (Dally 2001; Shepherd 2001; Siddle 2001; Walker 2001) do not describe birds with extensive white in the rump, which is typical in Portuguese breeding birds, including those in coastal areas. Extensive white in the rump may be more typical in southern populations of *rubicola*, and this is certainly true for the stonechats in Portugal, even those which are still in fresh plumage (cf. Svensson 1992).

Common Stonechats in Portugal also show a large amount of white in the wing and on the sides of the neck. The latter sometimes appears as a broad blaze which seems to extend onto the sides of the nape and again recalls 'Siberian Stonechat'. There is, however, some variation among individuals and this feature becomes more obvious with wear, later in the spring. Nonetheless, birds in Portugal do seem to show consistently more white on both the wings and the neck than would be expected for *hibernans*.

Examination in the hand shows the underwing-coverts of males to be dark grey with paler grey tips, this being darker than might be expected for *hibernans* yet not as dark as in *maurus*. Females show darker underwing-coverts than female *hibernans* (although paler than those of males, being light greyish with darker, blackish, shaft and subterminal area but lighter, whitish, tips).

There is a reduced amount of orange on the breast compared with that shown by many *hibernans*; typically, the lower belly is whitish and the whitish feathering extends up from this area towards the centre of the breast. The orange across the breast usually extends down the flanks. However, on some individuals the orange extends only to the upper flanks, where it is often admixed with a rather dirty greyish hue, some birds also showing diffuse dark streaks extending down the lower flanks. In addition, on some birds the orange on the underparts may appear to be less intense than might be expected for *hibernans*.



179. Male Common Stonechat *Saxicola torquatus*, Santo André, Portugal (coastal Alentejo, just north of Sines), 1st April 2004. Note the extensive white in the rump, with a few greyish feathers on the lower back. There is some dark on the longest uppertail-coverts and an orange hue to some feathers; while the bases of at least some rump feathers are dark.

There is also extensive white both in the wings and on the neck – the latter areas of white appear to extend onto the sides of the nape – and restricted orange on the underparts. This bird shows more than a passing resemblance to 'Siberian Stonechat' *S. t. maurus*.



181. Male Common Stonechat *Saxicola torquatus*, Sagres, Portugal (coastal Algarve, just east of Cape St Vincent), 28th March 2001. This individual also shows some similarities to 'Siberian Stonechat' *S. t. maurus*. Note the orange on the underparts largely confined to breast and upper flanks, with diffuse dark streaking down the lower flanks, and extensive white on the side of the neck.

Overall, females are slightly paler than would be expected for *hibernans*, particularly on the throat, upperparts and rump. The rump is typically peachy-buff with limited dark shaft-streaks on some feathers. Although the dark shaft-streaks do not extend to the tips of the



180. Male Common Stonechat *Saxicola torquatus*, Santo André, Portugal, 29th May 2004. This individual emphasises the restricted orange on the underparts of Portuguese birds.



182. Male Common Stonechat *Saxicola torquatus*, Boquilobo, Portugal (some 65 km from the coast, NNW of Lisbon), 5th April 2005. This individual is at the dark extreme for breeding birds in Portugal, and has extensive orange on the underparts and bold dark streaks on the rump. However, there is still extensive white on the rump and on the wings.

feathers in many individuals, there is more extensive streaking on some. Taking individual variation into account, the rump feathers of Portuguese birds are typically paler and less densely streaked than is shown on females illustrated in Walker (2001).

In summary, my observations suggest that there is one, not two, subspecies of Common Stonechat breeding in Portugal; and that these birds are more similar to *rubicola* than to a clinal extreme of *hibernans* (at least according to published descriptions). It seems plausible that the breeding population in Portugal shares many similarities with other stonechats breeding in Iberia and across the Mediterranean region, rather than those breeding in northwest Europe. However, given that these observations are based on current knowledge of the plumage variation of *rubicola* and *hibernans*, it seems prudent to echo Corso's (2001) sentiments that further research into the characters and variation of both would be useful.

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Griffon Vultures threatened by new EU legislation?

We wish to draw attention to the threat to Griffon Vultures *Gyps fulvus* and other carrion-eating species in the EU because of new regulations concerning the disposal of animal carcasses. In much of Spain, the Griffon Vulture is a common species that has thrived in recent years. In Aragon Region, numbers increased by up to 200% between 1979 and 1989 (Sampietro Latorre 2000); our own observations in the Gallocanta Lagoon area (Zaragoza Province) suggest a substantial further subsequent increase – whereas 20 years ago one saw only the odd bird, flocks of 50 or more are now quite frequent. The reason for this seems to be that the traditional custom of leaving animal carcasses in remote approved sites, which the vultures have always exploited, has been supplemented by a vast increase in intensive animal husbandry, particularly pig farms, resulting in far more carcasses being available. However, this practice of animal disposal has now been banned by the EU, apparently owing to fears of the spread of BSE, even though there is little if any evidence that such practice poses any BSE risk. In future, all animal carcasses will have to be put in sealed skips for later removal, thus depriving vultures of their most important source of food.

It is argued that the present numbers of Griffon Vultures, in Aragon at least, is exceptionally high and that they may be threatening

other, scarcer, raptors, such as Bonelli's Eagle *Hieraetus fasciatus*, by taking over their breeding sites (Fernandez & Donazar 1991). Furthermore, in the *Heraldo de Aragon* newspaper of 31st May 2006, an article appeared citing instances of Griffon Vultures attacking newborn lambs, and also adult sheep during the process of parturition. Local farmers are demanding a more rapid provision of specific vulture-feeding places, which are apparently to be allowed in special cases if animal corpses are in areas where access is difficult, or there are other exceptional circumstances. The obvious implication is that the reduction in food supply is causing the vultures to become more aggressive than before.

There is no real means of knowing the size of the vulture population of pre-industrial Spain, when animals were used for transport as well as farming. A drop in vulture numbers undoubtedly occurred with urbanisation, better hygiene, and the abandoning of the traditional village animal dumps, along with increased persecution (del Hoyo *et al.* 1994). The present numbers could represent no more than a return to historical levels. What is clear is that if live-stock carcasses are no longer available, there will be no back-up of the traditional supply of food from pre-industrial days.

Since the skips for carcasses are already appearing, there is an urgent need to assess the

likely effect of the new EU legislation on vultures and other carrion-eating birds, such as kites *Milvus*, before there is a catastrophic drop in numbers. Given the dubious nature of the BSE threat, would it not be possible to allow dumping of carcasses to continue in carefully regulated secure sites?

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The identity of MacQueen and a remark on *Phylloscopus trochiloides nitidus*

Martin Collinson's résumé of taxonomic changes to have affected the British List and *British Birds* list of Western Palearctic birds (Collinson 2006) will, I am sure, be welcomed by all those birders who have shied away from reading the detailed papers surrounding such decisions. I should like to make two comments in relation to his article.

First, the identity of MacQueen is, according to Beolens & Watkins (2003), not at all mysterious. The entry in the above-mentioned work is sufficiently succinct to bear repeating verbatim: 'General Th R MacQueen (1792–1840) collected in the Himalayas and northwest India and presented the bustard to the British Museum (Natural History). At the time when he collected it, he was a major in the 45th Bengal Native Infantry, a regiment in the Bengal Army of the Honourable East India Company.'

Second, I am pleased to see Collinson admit that 'a strong argument can be made that this taxon [Green Warbler *Phylloscopus trochiloides nitidus*] is fully diagnosable and... may merit

specific status.' I have been studying *nitidus* on its breeding grounds in the northeast Pontics regularly for more than 15 years (most recently in May 2006) and have long been unconvinced of the necessity of 'shoehorning' it into the Greenish Warbler *P. trochiloides* species, especially as the taxon in question lies outside the 'ring' to which the others do indeed belong! Here is not the place to expound my rationale for considering *nitidus* to warrant specific status, but such details will appear elsewhere (Kirwan *et al.* in prep.).

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Reviews

A HISTORY OF DEVONSHIRE ORNITHOLOGY: A REVIEW OF THE LITERATURE

By David G. Jenks. Isabelline Books, Penryn, 2004. 477 pages; 24 colour plates; black-and-white photographs.
ISBN 0-9542955-4-4.
Hardback, £58.00.

Over the last one century or more, the counties of the UK have largely been well served by a steady procession of increasingly comprehensive county avifaunas. Rather strangely, however, little has been researched and written about the groups and individuals that, through hard work and untold hours in the field, made these volumes possible. With this fine and thoroughly researched book, David Jenks has ensured that, at least for Devon, this situation has been rectified.

This volume covers ornithology and ornithologists in the county from the earliest times, beginning with the prehistoric birds whose remains were found mainly in the caves of south Devon. It is intriguing to read amongst this wealth of information that the remains of a Snowy Owl *Bubo scandiacus*, the only one known in southern England from the Pleistocene period, were found in cave deposits, and also, possibly, Capercaillie *Tetrao urogallus*. The author then deals with what he terms the 'pre-ornithological era', the age before systematic recording began, when most of the scant written statements refer to birds killed by

A History of Devonshire Ornithology



David G. Jenks

Isabelline Books

hunters, either for food or as vermin.

The first list of Devon birds appeared in the 1590s, and from this short and rather quaint list developed the type of recording we know today. As elsewhere, the first ornithologists tended to be retired army men, country parsons, or the more enlightened members of the landed gentry. Much space is devoted to the lives and ornithological exploits of the likes of Colonel George Montagu, John Gatcombe, Charles Dixon, and D'Urban and Mathew, the authors of the first comprehensive Devon avifauna, published in 1892.

The modern age of ornithology, and latterly birdwatching, began in the twentieth century, with the advent of greatly improved optics, and the fact that far more people were becoming interested in the subject. In Devon, as in many counties, it was quickly realised that organised birdwatching, linked with conservation, was an achievable and worthwhile goal. To this end, the

Devon Bird Watching and Preservation Society (DBWPS) was formed in 1928. The final chapters follow the development of this society and its impact, through both individual and group effort, on the knowledge of birdlife in the county.

It is sometimes forgotten in our 'information is power' society that any society's greatest assets are its members, who quietly contribute so much. In this book, the author is at great pains to identify and record all the work carried out within the county, and the participants who made this possible. It would be difficult to imagine the subject being covered in a better manner than in this book. David Jenks, who is the archivist for the DBWPS, has done a remarkable job bringing together information from primary and difficult-to-obtain secondary sources, and presenting it in such a way that it is both readable and informative. The book is well produced, with 24 colour plates and numerous illustrations throughout the text. Although it is not inexpensive, it is worth every penny and deserves to be read and referred to by all with an interest in Devon, its birds, and its birdwatchers.

To end on a light note, the cover illustration is delightful. It depicts members of the DBWPS standing for a group photograph, shortly after the founding of the Society. In this long-gone era, when the pace of life, and birdwatching, was so much less stressful than it is today, people had fewer reservations about looking individual!

Roger Smaldon

THE SECRET LANGUAGE OF BIRDS: A TREASURY OF MYTHS, FOLKLORE AND INSPIRATIONAL STORIES

By Adele Nozedar. HarperElement, London, 2006. 534 pages; line-drawings. ISBN 0-00-721904-9. Hardback, £16.99.

According to this book, those born under the star sign Taurus has an affinity with bullfinches *Pyrrhula*,

while Selena from Rio (presumably de Janeiro in Brazil, where the nuts come from) would like to be a

quail *Coturnix* but doesn't know why. Space is also devoted to 'creative visualization based on the symbolic birds used in the alchemical process', a phrase which just about sums up the usefulness of this volume for readers of BB.

Pete Combridge

**THE NATURE GUIDE TO
THE BIEBRZA MARSHES,
POLAND**

Crossbill Guide No. 1.
By Dirk Hilbers. KNNV,
Amsterdam, 2005. 107 pages;
colour photographs; maps.
ISBN 90-5011-209-9.
Paperback, €17.95.

**THE NATURE GUIDE TO
THE COTO DOÑANA AND
SURROUNDING COASTAL
LOWLANDS**

Crossbill Guide No. 2.
By Dirk Hilbers. KNNV,
Amsterdam, 2005. 160 pages;
colour photographs; maps.
ISBN 90-5011-210-2.
Paperback, €19.95.

**THE NATURE GUIDE TO
THE BIAŁOWIEŻA
PRIMEVAL FOREST**

Crossbill Guide No. 3.
By Dirk Hilbers. KNNV,
Amsterdam, 2005. 144 pages;
colour photographs; maps.
ISBN 90-5011-215-3.
Paperback, €19.95.

All Crossbill Guides can be ordered through www.crossbillguides.org for the above prices, plus postage.

This new series of wildlife guides is quite different from anything I have come across before. Having visited all the areas covered by these guides on several occasions, I realise how much easier my task would have been had these books been in existence then. The information provided is outstanding and I would thoroughly recommend them to all who travel to these regions, not least because 30% of profits will be donated to local conservation schemes. This whole series, which will eventually cover many more areas, is a Dutch idea, and the books are written by naturalists for naturalists.

Each guide reviews all forms of wildlife, but the locations covered, and those planned for the future, are all primarily key birding sites. In addition to birds though, each guide provides information on the landscape and habitats, and the flora and fauna of the region. I found the section on suggested sites and walks to be particularly useful. Each site includes a written description and is accompanied by a map showing suggested routes. Within the layout, the authors have included a series of helpful symbols that not only indicate the type of habitat and wildlife you might encounter, but also suggest

the best mode of transport you should use to appreciate each site to the full. This ranges from walking to driving but also includes both cycling and canoeing.

The books are lavishly illustrated with colour photographs, although the quality of some is not up to the standards of the best work available today. This is a minor criticism though. These guides are well thought out and are the most practical aides to enjoying wildlife in some of the most amazing places in Europe.

Derek Moore

**THE BIRD ATLAS OF
UGANDA**

By Margaret Carswell, Derek Pomeroy, Jake Reynolds and Herbert Tushabe. British Ornithologists' Club and British Ornithologists' Union, London, 2005. 553 pages; many distribution maps.
ISBN 0-9522866-4-8.
Hardback, £55.00.

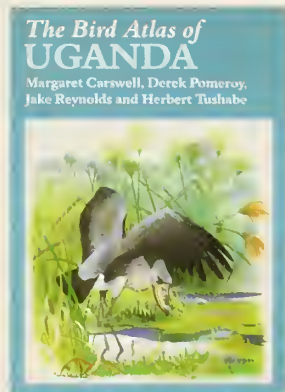
Uganda has a remarkably high diversity of habitats, which has resulted in a rich and varied avifauna. This atlas, the 17th for an African nation, is testimony to this diversity. Although Uganda's birds are now well covered by an excellent field guide, a site guide and a guide to the country's Important Bird Areas, any sense that the job has been done is soon dismissed. When you open this atlas, it becomes immediately apparent just how little we know about the birds

in this attractive country.

Introductory chapters cover Uganda's environment, history of ornithology, an overview of Uganda's birds, conservation, and bird distribution changes. The main body of the atlas covers all 1,007 species recorded reliably in the country. Of these, 822 have a distribution map, showing older records to their nearest quarter-square-degree (QSD) and more recent records mostly to the nearest 1 km, and a paragraph describing status, subspecies, habitat preferences and details of breeding records for the country. A further 32 species are considered questionable, being poorly documented for Uganda, and another 52 claimed species are discounted as erroneous.

The data for this atlas have been culled from published accounts, unpublished surveys and, most significantly, from Uganda's National Biodiversity Databank.

No special fieldwork was conducted. Some 33,000 point records (all post-1990) and around 9,600 pre-1990 records are included. Although this may sound a lot, it is actually rather few, considering the number of species, so coverage is rather uneven, both by species and by geography. Undoubtedly the most significant feature of the atlas is that the maps also show a 'predicted distribution' for many



species, to overcome the data shortfall. By using established vegetation classification and national rainfall data, the authors predict species distribution based on the presence of suitable habitat. Details of the methodology are given, although it is not clear whether the process was peer-reviewed.

These predicted distributions need to carry a clear 'health warning' because they cannot be used in the way that people often use range maps, to help them to decide what they might have seen. They are really a set of hypotheses yet to be tested, and there are plenty of occasions where they fail, predicting occurrence in parts of

the country where the species is known not to occur, and vice versa. This is particularly noticeable with highland forest species, which are predicted to occur in the Lake Victoria basin forests despite the fact that they clearly do not, and with a number of species known to be confined to the Albertine Rift forests in the far west, which are predicted to occur right across the country. Presumably, the two variables chosen are simply insufficient to explain complex distributions. Nonetheless, there are many species for which the predicted distributions appear to be quite satisfactory. If, however, you remain unconvinced by the value of the

predicted distributions, you can easily refer solely to the QSD and point records. It soon becomes apparent that even a relatively casual birdwatching visit to the country is likely to generate significant distributional information.

This is a thorough and well-researched atlas which will become the leading authority for Uganda for some time to come. It can be hoped that the maps will encourage many more to share the contents of their notebooks to fill the gaps in the data. The National Biodiversity Databank should benefit greatly from this publication.

Jeremy Lindsay

BIRDS OF BRITAIN AND EUROPE

By Rob Hume.

Dorling Kindersley, London, New York, Munich, Melbourne and Delhi. 456 pages; numerous colour photographs.
ISBN 1-4053-0753-6. Paperback, £16.99.

This is a revised edition of an RSPB-branded photographic guide that is already 'the UK's bestselling field guide'. It bears the name of Rob Hume, current editor of the RSPB members' magazine *Birds*, and a former chairman of BBRC. The publishers, Dorling Kindersley, are famous for clarity of presentation and the clean white design will be familiar to anyone who has seen other titles from the same stable. The 'Photo-shopped' photographs, with backgrounds removed, are reminiscent of the plates in the *Kaufman Field Guide to Birds of North America*. The accompanying text, though, is concerned more with anecdotes than tertiary fringes, and firmly targets the beginner rather than the expert. The flight-pattern diagrams are innovative, and potentially quite useful.

A total of 330 species are given a whole page each but, the book having European coverage, this means that almost 200 others are covered at four to a page and with a single small photo. The latter include several European breeding species, some arguably as common as those given full coverage, as well as many rare vagrants; even, for some reason, Senegal Thick-knee *Burhinus senegalensis*, which has never been recorded in Europe. Many of the rarities could easily have been omitted, allowing space for full coverage for all European breeding species.

It is clear why so many purchasers have been seduced by the attractive presentation. Photo guides have inevitably improved as good-quality photographs have become readily available and the ability to manipulate them has increased. The great majority of photos in this guide are useful but, for species with a range of plumages, the smaller photos require some peering at, even for those with good eyesight. The day when the photo guide replaces the conventional field guide on the shelf of the *BB* reader has still not been reached but, despite some reservations, this is a useful book and it should be on any short-list recommended to the beginner.

Mike Pennington

TIME TO STARE: WILDLIFE IN A CORNER OF BRITAIN

By Ray Armstrong. Grice Chapman Publishing, Burgh-next-Aylsham, 2005. 144 pages; many coloured photographs. ISBN 0-9545726-6-1. Paperback, £19.95 inc. p&p from publisher: PO Box 1135, Norwich NR10 3WU.

This delightful book derives its main title from W. H. Davies's famous poem *Leisure*. It describes the natural history of 20 km² of the Trellech Plateau in East Monmouthshire, beyond the River Wye above Tintern. This is the very country from which, at Cleddon, Wordsworth, in Tintern Abbey, drew his 'thoughts of more deep seclusion'. About a third of the book deals with birds.

As the introduction makes clear, the landscape of farming and Forestry Commission woodland has not been immune to the usual declines and losses among its birdlife, including many of its more interesting migrants. All recorded bird species are discussed. The colour photographs are superb, with notable life-size studies of Tree Pipit *Anthus trivialis*, Dipper *Cinclus cinclus*, Siskin *Carduelis spinus* and Yellow Wagtail *Motacilla flava* (the last being a newly arrived species). The fine illustrations are supported by a sensitive and perceptive text.

David Ballance

THE BIRDS OF ISLAY: A CELEBRATION IN PHOTOGRAPHS

By Gordon Langsbury and
Malcolm Ogilvie. Lochindaal
Press, Islay, 2006. 160 pages;
177 colour photographs.
ISBN 0-9551146-0-8.
Paperback, £17.50.

As the title suggests, this book is very much a collection of photographs that depict the rich and varied avifauna of one of Scotland's most beautiful islands. Species that breed, winter or pass

through as migrants in spring and autumn are included, thus very much giving a good 'feel' to what the island offers as a birdwatching destination and what one is likely to see.

A useful introductory section describes the various habitats and indeed their respective avian denizens. As for the photographs themselves, most are of good quality but many have suffered from inferior scanning and colour fidelity. I also feel that more could have been done to enhance the design of the book, which lacks 'punch' and is more akin to some-

thing published in the 1970s. Another minor gripe is the inclusion of a few anomalous picture captions, e.g. 'Robin feeding on hawthorn berries' – which it clearly isn't!

Criticisms aside, this book would go hand in hand with Ogilvie's *The Birds of Islay* and thus combined they provide the most up-to-date source of ornithological information for anybody visiting the 'Queen of the Hebrides'.

Hugh Harrop

ATLAS DES OISEAUX DE NORMANDIE EN HIVER

Co-ordinated by Bruno Lang.
Le Cormoran, Journal of Le
Groupe Ornithologique
Normand, Vol. 13, 2004.
232 pages; many colour
photographs; drawings;
distribution maps. No price
given. Available from the
Groupe at Universit, 14032
CAEN CEDEX, France.

This solidly bound and attractively printed book is the complementary volume to the same society's *Atlas des Oiseaux Nicheurs de Normandie et des Iles Anglo-Normandes* (Caen 1991), but this volume excludes the Channel Islands. The fieldwork for the breeding atlas was carried out from 1985 to 1988, while this book provides an update covering the period 1998 to 2001. It includes five Départements, from east to west – Seine-Maritime, Eure, Orne, Calvados and Manche – a region which the authors divide into 22 ecological areas. From a British point of view, this is the coast facing us across the English Channel from about Dungeness to

Portland Bill, and its hinterland, reaching southeast to within about 50 km of Paris: a land of many battle honours from 1944. The unit employed is a rectangle measuring 13.5 × 10 km, four of which make up one of the French 1:50,000 map series.

The text is written entirely in French. Those without the language will miss the excellent introduction, better written than those in many of our own county avifaunas and combining a lightness of touch with detailed analysis of habitats, as in the section on the 'Bocage'. This is the land of high-hedged pastures and orchards which, like our own, have seen great changes in the last 50 years.

The work has much to teach Anglo-Saxons who still imagine that no Fieldfare *Turdus pilaris* or Brambling *Fringilla montifringilla* is safe from the peasant's pot, and that ornithology is confined to Buffon's successors in museums. Some 250 observers contributed to this survey. British influence is acknowledged in the 'zones pavillonnaires' of the suburbs, where feeders and bird tables are now found, and Song Thrushes *T.*

philomelos and Blackbirds *T. merula* have lost their fear. The British reader looking through the maps will be attracted by those species which are only 100 miles from our shores but cannot make the necessary leap of La Manche: Black Woodpeckers *Dryocopus martius* press relentlessly westwards; there are some Zitting Cisticolas *Cisticola juncidis* along the coast; Crested Tits *Lophophanes cristatus* winter in 82% of the rectangles and appear at feeders; and a few Common Cranes *Grus grus* are now found in coastal bays. Other species have receded: Crested Larks *Galerida cristata* (which, like London's House Sparrows *Passer domesticus*, were linked to a high population of horses) are now confined to the east of Eure; Wood Larks *Lullula arborea* are erratic; Cirl Buntings *Emberiza cirlus* have decreased, but may benefit from programmes designed to restore orchards and hedges. The effects of autumn ploughing are as drastic as they are in Britain.

David Ballance

BIRDS IN BHUTAN: STATUS AND DISTRIBUTION

By Peter Spierenburg. Oriental Bird Club, Bedford, 2005. 383 pages; line-drawings, figures, maps. ISBN 0-9529545-1-6. Hardback, £45.00.

Peter Spierenburg was fortunate to live and work in Bhutan from early

1997 to mid 2002, and his job – assisting the Nature Conservation

Division of the Royal Government of Bhutan with the conservation and development programmes in their national parks – enabled him to travel extensively in the country at all times of the year, often trekking to remote areas that

tourists cannot visit.

In this sturdy and well-produced new book, the author has combined his own considerable ornithological observations with all other records, both historical and recent. He acknowledges the great help and encouragement he received from the Oriental Bird Club, most particularly from Tim and Carol Inskipp, who themselves had made several visits to Bhutan in the early 1990s. Several foreign bird-tour companies have made significant contributions during a total of some 40 tours since 1994. A small but increasing number of Bhutanese observers have also contributed a significant input of records. A database of over 91,000 records of 640 species, up to June 2002, was established and analysed.

The 32 extremely lucid introductory pages cover the methodology of analysis and data presentation, but also give fascinating accounts of the ornithological history of Bhutan, the extremely rich habitats and altitudinal zones, the migrational pat-

terns and seasonality of residents, winter visitors and summer visitors, and the threats and conservation issues facing the country. After the main species accounts, there is an eight-page list of references, a map showing the location of ten main birding sites and descriptions of those sites, and an update of significant records since June 2002, including five new species for Bhutan.

In the species accounts, 153 species are classified as vagrants or rare passage migrants and are dealt with in 3–12 lines of text. For the remaining 487 species, there is a Bhutan map with all confirmed records plotted on 5 × 5 minute grid squares overlying a portrayal by three shades of green of probable winter, all-season and summer altitudinal ranges. There is also a seasonal distribution histogram of individual records by altitude per month, and a text giving the breeding and wintering range within or outwith Bhutan, preferred habitats, abundance and densities, seasonality, and much

other relevant information. Reading carefully and studying the figures reveals that there are still considerable gaps in the knowledge of Bhutan's avifauna. Although I am not always a fan of vignettes, the majority of the selection (by some 15 artists) scattered through this book are excellent. Production costs probably prevented the inclusion of a few colour photographs of a selection of montane and temperate-forest habitats and, perhaps, Phobjikha Valley, the most important wintering marshland site for Black-necked Cranes *Grus nigricollis*, holding up to 260 birds.

The fantastic front-cover painting of a Ward's Trogon *Harpactes wardi* by Jan Wilczur will encourage anyone interested in birds to pick up this book, and once you browse inside you will want to buy it. Peter Spiereburg and the Oriental Bird Club are to be congratulated on a magnificent addition to the Asian ornithological literature.

Nick Dymond

BIRD MIMICRY

By Richard Ranft. British Library, London, 2006.
67 minutes.
ISBN 0-7123-0529-7.
CD, £9.95.

This CD gives 26 examples of birds mimicking sounds made by other birds or human activity. Most examples given are from European species. Although we might automatically think of Common Starling *Sturnus vulgaris* as a mimic, Calandra Lark *Melanocorypha calandra*, Blyth's Reed Warbler *Acrocephalus dumetorum*, Marsh Warbler *A. palustris* and Red-backed Shrike *Lanius collurio* are serious mimics too. Indeed, there are many other examples where species pick up sounds and include them in their songs. Looking back through old issues of *British Birds*, you will find that the subject has been raised many times.

European examples of mimicry on this CD (with their subject) are Corn Bunting *Emberiza calandra* (Yellowhammer *E. citrinella*), Eurasian Jay *Garrulus glandarius* (Common Buzzard *Buteo buteo* and horse), Blackbird *Turdus merula* (European Golden Plover *Pluvialis apricaria*), Great Tit *Parus major* (Eurasian Nuthatch *Sitta europaea*), Whinchat *Saxicola rubetra* (Bullfinch *Pyrrhula pyrrhula*), Song Thrush *T. philomelos* (Common Quail *Coturnix coturnix*), Spotless Starling *Sturnus unicolor* (European Scops Owl *Otus scops*), Sky Lark *Alauda arvensis* (Eurasian Curlew *Numenius arquata*), Woodchat Shrike *Lanius senator* (Wryneck *Jynx torquilla*), Calandra Lark (Goldfinch *Carduelis carduelis*), Northern Wheatear *Oenanthe oenanthe* (Meadow Pipit *Anthus pratensis*), Blackcap *Sylvia atricapilla* (Common Nightingale *Luscinia megarhynchos*), Bullfinch (human whistles) and Common

Raven *Corvus corax* (human voice). Of these, the Marsh Warbler is simply amazing, the track lasting over ten minutes and including sounds from the songs and calls of Great Tit, Blackbird, Magpie *Pica pica*, Greenfinch *Carduelis chloris* and Barn Swallow *Hirundo rustica*! Three examples from Australia are included: Superb Lyrebird *Menura novaehollandiae* (four species), Budgerigar *Melopsittacus undulatus* (human voice) and Fawn-breasted Bowerbird *Chlamydera cerviniventris* (absolutely anything!). The only North American example is of Northern Mockingbird *Mimus polyglottos*, while Lawrence's Thrush *Turdus lawrencii* is the only South American example.

In each case the mimicked birds' calls are played first and are followed by those of the mimic. This is not designed for bird identification but is worth buying for the interest alone.

Keith Betton

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

BB gets results

Shortly before we went to press this month, we received an e-mail from Tony Fox, the lead author of the paper on Greenland White-fronted Geese *Anser albifrons flavirostris* in the May issue (*Brit. Birds* 99: 242–261). Here is Tony's e-mail, in full:

'Dear Roger, I felt that I must write to tell you that I have just received a letter from the Ministry for the Environment in Iceland. I had sent the Minister a copy of our article, explaining that the yearly kill now effectively removes the entire annual production of young each season, even before adult mortality kicks in, which meant that the hunt was clearly totally unsustainable.

'Their reply states that: "The Ministry is delighted to inform you

that the Minister for the Environment, Ms Siguridur Anna Thordardottir, has decided to protect the Greenland White-fronted Geese from hunting in Iceland according to Act no. 64/1994 on Wild Animals. This means that there will be no hunting of Greenland White-fronted Geese as from the next hunting season, which according to the above-mentioned Act and Regulation no. 456/1994 on Bird Hunting starts on 1st September and ends 15th March. The minister is preparing changes regarding the above-mentioned regulation for that purpose that will be put into force [within] the very next days."

Tony continues: 'You can have little idea what this means to us, it has taken a lot of pressure behind the scenes from many people

(thanks especially to the Icelandic BirdLife Partner Fuglaverndarfélag Íslands); now it only remains to redraft the management plan for the population. A major motivation for writing the *BB* piece was to highlight the problem with the autumn season in Iceland, so I hope you will feel rightly pleased to have played a part in this happy saga. It is pleasing that good things do continue to happen in the conservation world! A celebration is in order!'

We do indeed feel pleased that *BB* has had some small role to play in this undoubted step forward for the conservation of the Greenland White-front. See the Icelandic Ministry for the Environment website: <http://umhverfissraduneyti.is/frettir/nr/832>

Notorious egger falls to his death

It was the last nest that he would attempt to rob. On 24th May, Colin Watson fell 12 m (40 feet) from a larch *Larix* tree while investigating a Eurasian Sparrowhawk *Accipiter nisus* nest and was declared dead at the scene.

The 63-year-old former power-station worker from Selby in North Yorkshire was the most notorious collector of wild birds' eggs in Britain for two decades. He was convicted six times under wildlife protection laws and fined thousands of pounds but his obsession continued until the last.

'This is a very tragic incident, but Colin Watson's misuse of his great knowledge was also a tragedy,' said RSPB spokesman Grahame Madge. 'He undoubtedly knew more about birds than many

of our own people, but his egg-collecting put the very species he hunted in danger. It was in the true sense of the word a perversion of expertise and talent.'

Watson's family and friends claimed that he had given up egg-collecting more than ten years ago, with the advent of tough additions to the Wildlife and Countryside Act. His many run-ins with the RSPB led to claims that he was the vandal who tried to cut down the Osprey *Pandion haliaetus* nesting tree at Loch Garten on Speyside, which was attacked with a chainsaw in 1986. The scale of his obsession had been revealed the previous year when the RSPB raided the home he shared with his disabled son and found more than 2,000 eggs, including those of

Golden Eagle *Aquila chrysaetos* and Osprey. Watson was fined £1,700 despite claiming the eggs had been collected before the 1981 Wildlife and Countryside Act outlawed the practice. He later appealed successfully against his conviction for illegal possession, but was fined £2,800 after subsequent raids.

New legislation that makes egg-collecting an imprisonable offence has resulted in the jailing of seven eggers in recent years. 'The message is getting across that the police are taking this seriously – and the courts are, too,' Mr Madge said. 'It is very sad that Mr Watson's life should end like this, but it is also a shocking reminder of how dangerous these sorts of activities can be.'

New law protects nests year-round

The Natural Environment and Rural Communities Act that came into force on 31st May has created a

new offence of taking, damaging or destroying the nests of certain wild birds at any time during the year.

The RSPB in Cumbria has welcomed the new legislation that will help to protect the nests of some of



183. Osprey *Pandion haliaetus* nests will enjoy greater protection thanks to new legislation.

England's rarest birds, including two iconic Lake District species: Golden Eagle and Osprey. A pair of

long-term breeding success by protecting their nests outside the breeding season.

Ospreys has nested beside Bassenthwaite Lake near Keswick since 2001 and a male Golden Eagle continues to try to attract a mate to his lonely eyrie near Haweswater. As the law currently stands, all birds' nests are protected under the Wildlife and Countryside Act 1981, but only while they are in use or are being built. The new Act will give new protection to birds that use the same nests year after year, and will assist their

David Hirst of the RSPB said: 'In Cumbria we are fortunate to have both the famous Bassenthwaite Ospreys and the only Golden Eagle in England, and both these species help to make the Lake District extra special for wildlife and attract large numbers of visitors every year. This new legislation provides welcome all-year-round additional protection to the nests of these special Cumbrian birds.'

And the Bassenthwaite Ospreys have surpassed themselves this year. For the first time, the nesting pair has hatched three chicks (the previous maximum number of chicks hatched at this site was two, in both 2002 and 2005). The Lake District Osprey Project (www.ospreywatch.co.uk) provides opportunities for visitors to see the birds through telescopes or on a big screen at the nearby Whinlatter Visitor Centre.

Marsh Harriers soar to 200-year high

In 1971, the Marsh Harrier *Circus aeruginosus* was hanging on by its talon-tips as a British breeding bird with a single pair remaining, at the RSPB's Minsmere reserve in Suffolk. Thirty-five years later, the harrier has soared to its highest population level for two centuries with 360 breeding females in 2005 fledging 800 young.

It's another remarkable turnaround in a raptor's fortunes that follows the crack-down on persistent pesticides and illegal persecution that hammered all birds of prey during the 1960s and 1970s. Resurgent populations of Eurasian Sparrowhawks, Peregrine Falcons *Falco peregrinus* and Common Buzzards *Buteo buteo* have also benefited from this robust regulatory regime but the Marsh Harrier has received additional help with the re-creation of the wetlands in which it thrives.

The breeding survey, conducted by the RSPB and English Nature in 2005, showed that there were 360 breeding females in England and Scotland last year, compared with

156 after the last similar count, in 1995 – a 131% increase. More than 800 young fledged in 2005, up from 350 in 1995. The survey also confirmed what many birders have increasingly logged across the country: that Marsh Harriers are spilling out of nature reserves and nesting in farmland. As Dr Mark Eaton, Research Biologist at the RSPB says, withdrawal of chemicals used to kill farmland pests has now made formerly no-go areas in our countryside suitable for Marsh Harriers once more.

Marsh Harriers, known colloquially as 'Bald Buzzards' (Essex and Northumberland) and the 'Dun Pickle' (Wiltshire), were once common in lowland reedbeds and marshes and were even found on upland moors. But drainage of the Fens and other wetlands for farming from the 1700s onwards caused the species to decline, and researchers believe that by 1800 there were already fewer birds than we have today. Persecution by gamekeepers hastened the Marsh Harrier's decline and as its rarity

increased, egg-collectors stepped up their efforts, exacerbating the bird's plight. From 1900 to 1920, the bird was extinct in the UK.

Legal protection helped Marsh Harriers to recover during the 1950s, only for pesticides such as DDT to cause a second decline. The chemicals left toxic residues in the Marsh Harriers' prey, causing eggshells to thin and break, so that eventually just the solitary successful pair at Minsmere remained. Now, Marsh Harriers breed across East Anglia, in Kent and north to Yorkshire, Lancashire and even into Scotland.

Allan Drewitt, Senior Ornithologist at English Nature, said: 'The Marsh Harrier is a stunning bird and the survey results are great news. Now that the birds have spread to farmland, we must continue working with farmers to protect birds nesting in crops by preventing disturbance and ensuring nests are not destroyed during harvest.'

UN blames poultry trade for bird flu

The UN's Food and Agriculture Organisation (FAO) says that it is unreasonable to blame wild birds as the source of H5N1 avian influenza, in the absence of rigorous research into their role in the ecology and dynamics of the virus.

The FAO's statement asserts: 'It is indeed likely that [wild birds] can introduce the disease to unaffected areas from countries in which the disease has already been identified. But the disease is spread through the human activities of poultry production, improper hygiene and uncontrolled commercialisation.' The 'simple fact', the FAO says, is that more research is needed to understand wild-bird migration and the vulnerability of different species, in order to perform proper risk assessments, and recommend risk mitigation measures where required. But they add: 'Surveillance for avian influenza viruses and the presence of the H5N1 virus in wildlife can be given priority only once ade-

quate surveillance of the poultry sector is in place, since poultry are more likely to transmit infection to humans and other susceptible animals. To devote resources to monitoring wild birds rather than take stock of production practices and improving such practices would not be justified.'

FAO and the World Organisation for Animal Health (OIE) organised an international scientific conference on avian influenza and wild birds, held in Rome during 30th–31st May, to try to improve understanding of the role of wild birds in the transmission of avian flu. To mark the beginning of the conference, members of the Italian Society for the Protection of Birds (LIPU) expressed their support for wild birds and highlighted the poultry trade's role in the spread of H5N1. At an event organised by LIPU near Rome's famous Colosseum, two gladiators from a local historical society joined around 20 LIPU volunteers

in helping to symbolise the battle against H5N1. The 'flu fighters' also reminded the press gathered at the event of Rome's early history: the Eternal City was reputedly founded by Romulus, who was supposedly guided to its site by the flight of a flock of migratory birds.

'It is unfair and dangerous to use wild birds as convenient scapegoats for the spread of H5N1, when the real problems lie with the intensive rearing of poultry and the massive international trade in poultry products,' commented Elena d'Andrea, the head of LIPU. 'Wild birds play a major role in the functioning of the global ecosystems and are a source of inspiration to people across the planet. The mass hysteria generated by the avian influenza scare is damaging our relationship with them: people are even destroying [Barn] Swallows' [*Hirundo rustica*] nests out of an irrational fear of these messengers of spring,' she added.

Albatross decline continues

New research from South Georgia reveals that three species of albatross nesting on the South Atlantic islands have declined at an alarming rate over the past 20 years and unless these declines can be halted or reversed, the islands' albatrosses could face extinction.

The joint RSPB/BirdLife research shows that the islands, a UK Overseas Territory, have lost nearly one-third of their Wandering Albatross *Diomedea exulans* population since 1984 and that two other species breeding at South Georgia – Black-browed *Thalasarche melanophris* and Grey-headed Albatrosses *T. chrysostoma* – are also suffering similar rates of decline.

In common with other albatrosses around the world, the major threat seems to be longline fishing. It is estimated that up to 100,000 albatrosses annually – or one bird every five minutes – drown

on the end of a longline fishing hook as they try to snatch bait.

Sally Poncet, of South Georgia Surveys and the report's lead author, said: 'It is well known that albatrosses worldwide are dying needlessly in longline fisheries. Our survey has shown that South Georgia's albatrosses, in particular, are being pushed to the point where three species are threatened with extinction.'

Dr Phil Trathan, Head of Conservation Biology at the British Antarctic Survey and a co-author of the report, said: 'Birds are most likely caught thousands of miles away from their breeding grounds. They are particularly at risk off South Africa and South America and it's therefore important that bodies regulating these waters make them safe for albatrosses.'

As part of the Save the Albatross campaign, the RSPB and BirdLife recently launched the

Albatross Task Force, a practical project to reduce the number of seabirds killed on longline hooks. Specially trained task-force members are working at sea helping longline fishermen to adopt simple and proven measures, such as setting streamer lines adjacent to the longlines to scare birds away from baited hooks.

Visit the Save the Albatross website: www.savethealbatross.net

Shetland Recorder

Please note the new e-mail address for the Shetland County Recorder, Micky Maher, who would welcome all outstanding rarity descriptions, local and national, from this year and last, as soon as possible: mickymaher@tiscali.co.uk

Reserve wins water licence despite drought

Despite the first drought orders for a decade imposed in Kent to prevent non-essential uses of water, the RSPB has been given emergency powers to pump water onto its Elmley Marshes reserve.

After two consecutive dry winters on the Isle of Sheppey, water levels are extremely low and so are the numbers of invertebrates in the soil. The number of wading birds breeding on the reserve has plummeted over the last two years and this spring hit an all-time low. Those chicks that did hatch faced an early death from starvation.

In desperation, the RSPB applied under new legislation for a temporary licence to pump water onto the marsh from a nearby creek. So severe is the problem that the Environment Agency granted the Society permission to take water from the creek for 28 days.

Phil Burston, the RSPB's Senior Water Policy Officer, said: 'In a normal year, we would be looking at 200 breeding pairs of Northern Lapwing *Vanellus vanellus* at Elmley. [As a consequence] it is normally one of the most important wetlands in Britain, but last year there were 80 pairs and we now seem to be down to just 60. Even back in March and April the site looked like it would normally look in late July, water levels were that low and fields that dry. All that meant food was not available. We have seen adult birds starving and emaciated because they couldn't find food. And at the moment, most of the chicks aren't going to survive.'

But permission to pump water from Windmill Creek alongside the reserve could save the day. The creek does not supply water to any other user. Harvey Bradshaw, the Environment Agency's Kent Area Manager, said: 'In this instance, we granted a 28-day licence. We needed to respond very quickly in order to provide the environmental benefit that the RSPB has identified.'

Phil Burston added: 'This should have something like an instant bird-table effect. Almost as soon as water is on the site, you will see waders coming on it to feed. They will have access to food like earthworms [Lumbricidae], which have suddenly been flushed to the surface. The hope is that it will take only a few days to raise water levels on about 20% of the 282-ha reserve.'

Ring Ouzel is 'victim of climate change'

The 'Mountain Blackbird' could be one of the first victims of climate change in Britain, with a 60% population decline in just ten years.

Ring Ouzels *Turdus torquatus* nesting in England and Wales are at the southernmost limit of their breeding range. It's feared that higher temperatures in late summer, prompted by climate change, are affecting Ring Ouzels in northern England, the Peak District, north Wales and the Brecon Beacons. They have already disappeared from the Long Mynd in Shropshire, where there were 12 pairs in 1999. In Dartmoor and Exmoor they used to be plentiful but now there are only a handful left.

Dr Colin Beale, who led research published recently in the *Journal of Animal Ecology*, said: 'We think that Ring Ouzels in England and Wales are being hardest hit by the warmer temperatures. They just seem to be dying out rather than adapting and moving elsewhere. But that isn't to say there isn't hope for them. We think that it is changes in the availability of food, rather than higher temperatures themselves, that is the problem and we may be able to do something to help.'

Little is known about what the birds do in the period after they finish breeding but before they migrate south for the winter. It's during this period that a number of Scottish birds – around 25 or so in the Highlands – will be fitted with radio tags and their movements tracked using radio receivers to monitor each bird's individual behaviour. The theory is that dry ground caused by warmer weather in July and August means that earthworms are more difficult to find and may also affect berry crops, staple foods on which the birds rely. This could be leaving the birds in poor condition for their autumn migration to Spain's Sierra Nevada and the Atlas Mountains of Morocco and Algeria, so that fewer birds survive the journey.

Dr Beale said: 'Breeding success has actually increased even though the bird has declined overall. If we change the management of moors so that heather [*Calluna vulgaris*] grows larger, there may then be more moisture left in the soil. That means earthworms will be nearer the surface and there'll be more food available for Ring Ouzels. We think they can survive warmer temperatures themselves but [they] obviously cannot survive if there is too little food.'

Visit the Ring Ouzel Study Group website: www.ringouzel.info



184. Male Ring Ouzel *Turdus torquatus*.

White-tailed Eagle nests in The Netherlands

Following the announcement of reintroduction plans for White-tailed Eagles *Haliaeetus albicilla* in England (*Brit. Birds* 99: 165–166) and Wales (*Brit. Birds* 99: 328) comes news that the species has naturally colonised The Netherlands. The first successful nest is in Flevoland, where White-tailed Eagles regularly overwinter; the nearest breeding birds are 250 km to the east, in Niedersachsen, Germany.

There is no proof that White-tailed Eagle nested in The Netherlands in the past. Despite this, there was a proposal to 'reintroduce' the species but this was opposed by birders who pointed out that the wild population in Europe was increasing and spreading west (in Austria, Denmark and Germany), and that it was just a matter of time before it started breeding in The Netherlands. However, few people anticipated that this would happen so soon.

The female of the nesting pair wears a ring which shows that she was born in May 2002 at Garsbek, Schleswig-Holstein, Germany. Since September 2004, she's been paired with an older male. They oversummered in Flevoland in 2005 before starting serious nesting in March 2006.

Website of the month

Now that the summer holidays are approaching, many birders will soon be crossing the Channel for a European break, and Kent will be their last – and first – sight of England on their travels.

The Kent Ornithological Society (KOS) has an impressive website www.kentos.org.uk that is well worth a visit if you're heading to the county – and even if you're not. It's well designed and user-friendly with handy 'buttons' for the *Kent Bird Report*, articles from the *KOS Gazette*, a Kentish Wildlife section and Latest Sightings. This last section is subdivided into recent reports from a list of 18 sites, including the famous (Dungeness) and the less familiar (Reculver or Seasalter). Some of these 18 localities have their own websites, linked from the main site, e.g. PlanetThanet www.planetthanet.org

The Trip Reports section has KOS members' reports from across the globe – from Varangerfjord to Vanuatu! And the photo gallery has a wonderful archive of pictures dating back to 1974. The headline image is, of course, the Larkfield Golden-winged Warbler *Vermivora chrysoptera*, from 1989.

All visitors to the site should make sure that they click on the *What's New?* button. Newest on 31st May was Andrew Henderson's analysis of the unprecedented European Storm-petrel *Hydrobates pelagicus* passage off Kent in late May; an exemplary piece of rapid-reaction web-work long before the annual report is printed.

BBRC records by e-mail

This is a reminder that BBRC would prefer e-mail submissions for *all* records from 1st January 2006. For those able to submit records by e-mail, we would prefer descriptions in Word, but with any photos or sketches as separate jpegs and not embedded in the document. Please send all submissions to: secretary@bbrc.org.uk



Derek Ratcliffe memorial

A memorial to 'the most outstanding and influential nature conservationist of the late twentieth century' was unveiled in Cumbria on 9th June. Dr Derek Almey Ratcliffe, who died on 23rd May 2005 (see *Brit. Birds* 98: 439–441), was commemorated at a ceremony held at English Nature's Finglandrigg National Nature Reserve at Kirkbampton, near Carlisle. Derek Ratcliffe, who grew up in and around Carlisle, led the scientific research during the 1960s which discovered that the now notorious pesticide DDT was responsible for declines in birds of prey. He wrote definitive monographs on the Peregrine Falcon and the Common Raven *Corvus corax*, and was an authority on mountain and peatland ecology.

Dr Keith Duff, English Nature's Chief Scientist, said: 'Derek's enthusiasm, knowledge and commitment to the natural environment galvanised and inspired his colleagues in the Nature Conservancy Council. He undoubtedly established the strong scientific underpinning which supports wildlife conservation in Britain today. It is entirely appropriate that this permanent memorial to his achievements is at Finglandrigg National Nature Reserve, one of his favourite places whilst he was growing up.'

Dr Des Thompson, Scottish Natural Heritage's Upland Ecologist, said: 'This is a day to reflect on a remarkable scientist, whose research has given us a healthier environment in which to enjoy wildlife. The Peregrine Falcon and nature conservation shall forever be linked to Derek Ratcliffe's inspirational work.'

The carved-bench memorial at Finglandrigg was unveiled by Derek Ratcliffe's widow, Jeannette.

Smokers stubbed out by nesting birds

What links a police station in Dorset with an accountants' office in Bristol? Well, both have experienced unilateral anti-smoking campaigns by nesting tits (Paridae). Despite the obvious risk to their health, a pair of Blue Tits *Cyanistes caeruleus* in Dorchester and a pair of Great Tits *Parus major* in Bristol made their nests this spring in exterior wall-mounted ashtrays usually used

by furtive smokers banished outside from their smoke-free workplaces.

At Dorchester police station, the nesting Blue Tits laid ten eggs in the metal ashtray. The area was cordoned off so that the birds were not disturbed. Dorset Police spokesman Sgt Dave Stroud said: 'It's incredible. I suppose you could say it's a joint operation to stamp out smoking once and for all!' Appropriately named wildlife officer PC

Dave Bird said: 'All wild birds are protected in this country, especially during the nesting period. While they are building their nest, while the nest is in use and until all the birds leave the nest, everything is being done to prevent them from flying the nest and leaving the eggs.'

Meanwhile, across in Bristol it was a family of Great Tits that took up residence in a wall-mounted ashtray. The female, nicknamed Splutter, built a nest out of dis-

carded cigarette ends in the ashtray outside PKF accountants in Clifton. A notice was put up asking smokers to stub out their cigarettes elsewhere. The company's marketing executive, Sue Nash, said: 'The bird lined the nest by pulling the sponge out of the cigarette ends and bits out of cigarette papers. The smokers in the office have taken it well and think it's quite sweet and it's a bit of an extra incentive to give up.'

The Atlas of German Breeding Birds

Over 1,500 volunteers are poised to record the populations of all breeding bird species in Germany, over a four-year period, from the Danish to the Swiss borders and from France to Poland. This project is to culminate in a standard federal work that will present the distribution of some 250 breeding bird species in a comprehensive atlas for the first time. The atlas project is christened ADEBAR, the folk name for the White Stork *Ciconia ciconia*, and an acronym in German for the ATLAS DEUTSCHER BRUTVOGELARTEN (Atlas of German Breeding Bird Species).

When the German Bird

Monitoring Foundation (www.vogelmonitoring.de) and the Federation of German Avifaunists (Dachverband Deutscher Avifaunisten e.V. – DDA) launched the ADEBAR project in 2004, professional and amateur ornithologists were faced with a task of gigantic proportions. Many sceptics forecast a difficult birth and almost impassable hurdles, not least because the lion's share of the mapping and co-ordination tasks had to be shouldered by volunteers. The sceptics were wrong – as the brochure containing the results of the first year's work so impres-

sively demonstrates.

Following on from the mini or pilot atlas 'Breeding Birds in Germany', which appeared at Christmas 2004 to mark the start of mapping for ADEBAR, the German Bird Monitoring Foundation published a working report on the results of mapping in 2005 at the end of March. ADEBAR is not only the largest mapping project undertaken in Germany; it has sparked enthusiasm among field ornithologists well beyond all expectations with some 2,000 professionals and amateurs now involved in the fieldwork!

(Contributed by David Conlin)

Requests

Wood Lark and Dartford Warbler – 2006 breeding-season records

All records are required for singing male Wood Larks *Lullula arborea* (between 15th February and 31st May) and Dartford Warblers *Sylvia undata* (between 1st April and 31st July). This information will be used to supplement records collected by the national surveys currently taking place this summer. Both surveys are a joint collaboration among the BTO, RSPB, Forestry Commission (England), JNCC and English Nature, and are organised

by BTO and RSPB.

Although the main sites are already being covered, we are still extremely keen to receive details of additional records during the breeding season, particularly from potentially new sites or parts of the country where breeding records are scarce. In particular, Wood Lark records from this spring are especially valuable, as few males were detected singing during the prolonged cold spell early in the year.

Please send your records to Greg Conway at BTO (e-mail greg.conway@bto.org; tel. 01842 750050) or Simon Wotton at RSPB (e-mail simon.wotton@rspb.org.uk; tel. 01767 680551). Recording forms and further details of the surveys can be obtained from the following website: http://www.bto.org/survey/special/dartford_woodlark.htm

Sightings of colour-ringed Chiffchaffs

Since 1999, over 700 wintering Common Chiffchaffs *Phylloscopus collybita* have been marked in southern England as part of a study to investigate their origins and wintering ecology. Each bird

carries a total of four rings (two on each leg), consisting of a metal ring and three coloured rings (one may be bi-coloured but always above the metal ring). All sightings are required and will be fully acknowl-

edged. Please send details of sightings to Greg Conway, BTO, The Nunnery, Thetford, Norfolk IP24 2PU; e-mail greg.conway@bto.org; tel. 01842 750050.

Obituary

John Duncan Wood (1910–2006)

Duncan Wood was born on 10th November 1910 into a staunchly Quaker family, his parents being wardens in the early 1900s of the Quaker College, Woodbrooke, on the Bristol Road at Bournville, Birmingham. Duncan was educated at The Downs School, Colwall, Malvern, and at Leighton Park, the Quaker boarding school in Reading. At The Downs he developed an interest in bird-watching, which, on meeting my father, Ralph Barlow, was enhanced to their mutual benefit, and they both went on to play an active role in the Natural History Society at Leighton Park School. Their keenness on birds was greatly heightened by the help and friendship of Horace Alexander (HGA) who, aside from being one of the leading ornithologists of his age, was himself a Quaker. As a result of HGA's tuition, Duncan kept detailed records and his name appeared in the Birmingham Bird Club (started in 1929 by W. E. Groves) reports as a contributor until his departure abroad in 1952.

In 1931, in *The Art of Bird-watching*, Max Nicholson had called for a national society of birdwatchers. Inspired by this, Duncan, together with J. F. Wynne, wrote to Max suggesting that this might be formed as a federation of bird clubs and that a commission should be set up to do some background preparation. History does not reveal what then happened, but by the following autumn Max Nicholson had organised a pre-

inaugural meeting of an embryonic BTO Council.

After Leighton Park, Duncan went on to Queen's College, Oxford, where he studied Classics and History, returning to Leighton Park in 1934 to teach those subjects. The school wanted him to teach some French, too, and in 1936 he spent a term in France, where he met Katharine Knight. After the war, they married in Bournville, in August 1945.

During the war, Duncan had been a conscientious objector and served in The Friends Ambulance Unit in China. Upon cessation of hostilities, he returned to Leighton Park, where he also ran the school Bird Group. One of its members was Robert Gillmor, who has written of Duncan: 'His running of the Bird Group was inspirational. The meetings were run on traditional club lines, with Chairman, Secretary, etc. Minutes were kept of each meeting, read, approved and signed at the next. There was a Committee. Speakers were invited, looked after, introduced, and given votes of thanks at the end. All rich education of the best kind, which was a huge help to many of us later. Not to mention the bird recording, and expeditions to London to see Black Redstarts *Phoenicurus ochruros* on bomb sites, to Skokholm Island, or to Perry Oaks Sewage Farm. We greatly missed him when he left, but the Bird Group carried on.' Other notable ornithologists fostered by the Leighton Park Bird Group include

James Cadbury, Jeremy Sorensen and Humphrey Dobinson.

In 1947, Duncan was one of the prime movers in starting the Reading Ornithological Club and was its first Chairman. Two years later, he was appointed assistant editor of *British Birds*, perhaps as a result of his earlier correspondence and subsequent meetings with Max Nicholson. Bernard Tucker, then editor of *BB*, recorded in an editorial in January 1949 that: '... I have been fortunate in being able to arrange for the addition of Mr J. D. Wood BA MBOU to the *British Birds* staff. Mr Wood is an assistant master at Leighton Park School, Reading, and an excellent field ornithologist, in whom I have the greatest confidence. He will take over most of the routine editorial work and much of the correspondence, but I shall continue to be responsible for all the essential duties of an editor-in-chief and for dealing with the more critical problems of biology and identification. I am confident that this solution of the problem of division of labour will prove a happy and effective one.'

Bernard Tucker died less than two years later, at the end of 1950, and Max Nicholson became senior editor of *BB*; Tucker's obituary, written jointly by Max and Duncan, was published in *BB* in February 1951. Duncan Wood remained assistant editor until the middle of 1952, after which he was succeeded by James Ferguson-Lees. An editorial in *BB* in June 1952

concluded: 'Finally, it is with the utmost regret that we have to announce the impending retirement from the Editorial Board of J. D. Wood, who is taking up a post at Geneva which makes it impossible for him to continue to serve. We are sure that all our readers will join with us in paying tribute to the great contribution which he has made to *British Birds* during one of the most difficult periods of its existence, and to the pleasant and efficient manner in which he has kept all concerned with its preparation and production in touch. He has not spared himself and he has certainly left his mark.'

Duncan subsequently worked for and then ran the Quaker United Nations Office in Geneva, where he was actively involved in the cause of world peace. The work of the UN in Geneva and its associated agencies includes disarmament negotiations, the status of women, the rights of the child, the protection of refugees, and agreements on working conditions, trade and tariffs. Duncan and

Katharine jointly undertook lobbying, witnessing, advocacy, mediation, and building relationships. They tried to convey to international representatives the concerns of Quakers and to reflect back to Britain and America both progress and challenges in these areas.

On his retirement in 1977, Duncan moved to Arnside in Lancashire, where he continued to pursue his interests in ornithology. He was later asked to contribute a chapter to a biography of Horace Alexander, but found that there was so much to say that he was persuaded by many, myself included, to compose it into a book, *Horace Alexander: 1889 to 1989 – Birds and Binoculars*, duly published in 2003. It set HGA's involvement into the history of British birdwatching in the twentieth century. Duncan's early note-taking had been sufficiently good for him to be able to remark, in that book, that the first trip out with HGA was to the two Bittell Reservoirs, south of Birmingham, on 20th January 1924 when, aside

from many new wildfowl, HGA identified a Hawfinch *Coccothraustes coccothraustes* for them. Duncan also recalled that he and my father had encouraged HGA to visit Belvide Reservoir in the 1920s to assess its potential. HGA quickly became aware of its attractiveness to birds and lobbied for its recognition as a leading Midlands birdwatching site, which it remains to this day.

Duncan Wood maintained both his interest in ornithology and his strong religious beliefs to the end. Despite becoming increasingly frail and frustrated by failing sight and hearing, he remained as sharp as ever in mind and conversation. He died on 24th February 2006, just a fortnight after his 96th birthday.

I would like to thank James Ferguson-Lees, Robert Gillmor, Jeremy Greenwood, Duncan's daughter, Rachel Malloch, and Roger Riddington for their help in the preparation of this obituary.

Nick Barlow

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mid May to mid June 2006.

Blue-winged Teal *Anas discors* Castlespie (Co. Down), 14th–25th May; Wilkin's Pool (Cumbria), 16th–19th May, same individual as in Northumberland during April (bird is ringed). **Lesser Scaup** *Aythya affinis* Suffolk Water Park (Suffolk), 10th–17th May.

Black-browed Albatross *Thalassarche melanophrys* Sula Sgeir (Western Isles), presumed returning individual from mid May onwards. **Bulwer's Petrel** *Bulweria bulwerii* Selsey Bill (West Sussex), 30th May. **European Storm-petrel** *Hydrobates pelagicus* Unseasonal westerly passage along the south coast of England, including over 400 at Dungeness (Kent) between 21st and 28th May, from where there

are no previous spring records, and up to 3,000 past Portland (Dorset), between 19th and 28th May; also 369 at Hope's Nose (Devon), on 26th May.

Night Heron *Nycticorax nycticorax* Garstang (Lancashire), 9th May; St Agnes (Scilly), 15th May; Bridge of Allan (Forth), 21st May; Port Erin (Isle of Man), 28th May; Tacumshin (Co. Wexford), 28th May to 5th June. **Great White Egret** *Ardea alba* Roadford Reservoir (Devon), 9th–10th May; Rosslare (Co. Wexford), 14th–16th May; Boyton Marsh, 15th May, presumed same Bawdsey (both Suffolk), 18th May; Aldborough (North Yorkshire), 8th June, presumably same Hornsea Mere (East Yorkshire), 8th and 11th June; Walney (Cumbria), 9th June; Wigg Island/Woolston Eyes (Cheshire), 10th June. **Black Stork** *Ciconia nigra* Wester Clunes

(Highland), 9th May, presumed same near Dufftown (Moray), 13th May; North Ronaldsay (Orkney), 10th May; South Shields and Whitburn (both Co. Durham), 16th May, presumed same Frosterley and Plenmeller Common (both Northumberland), 17th May, presumed same Filey and Wykeham Forest (both North Yorkshire), 23rd May; Margate (Kent), 6th June, presumably same between Gazeley and Kennett (Suffolk/Cambridgeshire), also 6th June, and possibly same over Marshside (Merseyside), 8th June.

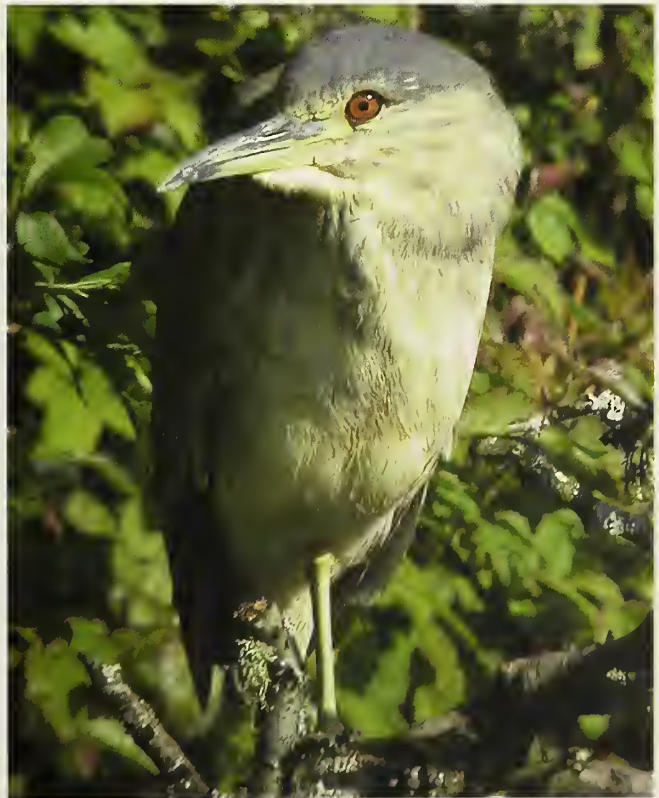
Black Kite *Milvus migrans* Grain, 9th May, presumed same Cliffe Pools (both Kent), 9th May; Leeds (West Yorkshire), 9th May; London Wetland Centre (London), 10th May; Hambledon Common (Hampshire), 13th May; Wickhambreaux/Wingham area (Kent), 20th–21st May; Buckfastleigh, 31st May, presumed same Challacombe Down (both Devon), 1st June; Dunwich Heath (Suffolk), 5th June; Polzeath (Cornwall), 6th June. **Red-footed Falcon** *Falco vespertinus* Walland Marsh (Kent), 14th May; Farlington Marsh (Hampshire), 4th June; Holt Heath (Dorset), 4th June; Bryher/Tresco (Scilly), 8th June; Brow Marsh (Shetland), 10th June; Rookery Clay Pit (Bedfordshire), 10th–11th June. **Gyr Falcon** *Falco rusticolus* South Ronaldsay (Orkney), 23rd May.

Black-winged Stilt *Himantopus himantopus* Upton Warren (Worcestershire), 21st–22nd May; Martin Mere (Lancashire), two, long-stayers, to at least 10th June. **Pacific Golden Plover** *Pluvialis fulva* Hickling Broad (Norfolk), 6th June. **Baird's Sandpiper** *Calidris bairdii* Ashton-on-Trent (Derbyshire), 7th June.



Graham Catley

185. Common Quail *Coturnix coturnix*, Worlaby Carrs, Lincolnshire, June 2006.



Eric Dempsey

186. First-summer Night Heron *Nycticorax nycticorax*, Tacumshin, Co. Wexford, June 2006.

Simon Rowlands



187. Common Crane *Grus grus*, with Whooper Swan *Cygnus cygnus*, Durness, Sutherland, May 2006.

Broad-billed Sandpiper *Limicola falcinellus* Spurn (East Yorkshire), 13th–15th May; Tacumshin, 13th–16th May; Cockersand (Lancashire), 15th–17th May; Over Fen (Cambridgeshire), 19th May. Buff-breasted Sandpiper *Tryngites sub-ruficollis* Lough Beg (Co. Derry), 27th May. Long-billed Dowitcher *Limnodromus scolopaceus* North Uist (Western Isles), 9th May. Marsh Sandpiper *Tringa stagnatilis* Cold Harbour (Kent), 11th June. Lesser Yellowlegs *Tringa flavipes* Freiston, 7th–9th June, presumably same Gibraltar Point (both Lincolnshire),

9th–11th June. Spotted Sandpiper *Actitis macularius* Menloe (Co. Galway), 19th May; Newlyn Harbour (Cornwall), 25th–28th May; Minsmere (Suffolk), 1st–2nd June. Wilson's Phalarope *Phalaropus tricolor* Hillesden (Buckinghamshire), 27th–30th May.

Laughing Gull *Larus atricilla* Waterside (Co. Galway), 10th–13th May; Cork City (Co. Cork), 10th–16th May; North Ronaldsay, 18th May; Bunbeg (Co. Donegal), 28th May; Lewis (Western Isles), 3rd June; North Uist (Western

Isles), 6th June. Franklin's Gull *Larus pipixcan* St John's Point (Co. Down), 18th May; Belgooley (Co. Cork), 31st May. Bonaparte's Gull *Larus philadelphia* Kenfig Pool (Glamorgan), 18th May; Blenner-ville (Co. Kerry), 29th May to 4th June.

Gull-billed Tern *Gelochelidon nilotica* Various sites between Hartlepool Headland (Co. Durham), and Cresswell (Northumberland), two, 9th May; Braunton (Devon), 14th–18th

Graham Catley



188. Black-winged Stilt *Himantopus himantopus*, Barton-on-Humber, Lincolnshire, May 2006.

May; Kingsbury Water Park (Warwickshire), 19th May, same, Lound Gravel-pits (Nottinghamshire), 19th May; Pilmore (Co. Cork), 20th–23rd May; Dungeness, 25th May. **Caspian Tern** *Hydroprogne caspia* Hayling Island and Taddiford Gap (both Hampshire), 10th June. **Whiskered Tern** *Chlidonias hybrida* Rockland Broad (Norfolk), 25th–26th May; Blennerville, two, 1st June; Loch Skene (Northeast Scotland), 5th June. **White-winged Black Tern** *Chlidonias leucopterus* Barton-on-Humber (Lincolnshire), 23rd–25th May, presumed same, Broomhill Flash, 26th–27th May, Old Moor RSPB and Wombwell Ings (all South Yorkshire), 27th May. **Forster's Tern** *Sterna forsteri* The long-staying adult was last seen at Nimmo's Pier (Co. Galway) on 11th May; another was at Lady's Island (Co. Wexford) on 23rd May.



Graham Catley

189. Adult White-winged Black Tern *Chlidonias leucopterus*, Barton-on-Humber, Lincolnshire, May 2006.

Eurasian Scops Owl *Otus scops* Fair Isle (Shetland), 16th May. **European Bee-eater** *Merops apiaster* Porthgwarra (Cornwall), 7th May, presumed same, Polgigga (Cornwall), 11th May; Sandwich Bay (Kent), 13th May; Grune Point (Cumbria), 14th May; Winterton (Norfolk), 19th–20th May; Maywick (Shetland), 24th May; Dungeness, 30th–31st May; Portland, 2nd June; Caister (Norfolk), at least six, 2nd June with five at Wroxham (Norfolk), 2nd June presumably part of the same; Dunwich (Suffolk), 4th June; Sancreed (Cornwall), two, 4th June; Reston (Borders), three, 7th June; Codnor Park (Derbyshire), 10th June; Spurn, 11th June.

Calandra Lark *Melanocorypha calandra* Isle of Fife), 12th–14th May. **Short-toed Lark** *Calandrella brachydactyla* Fair Isle, 13th–16th, another 23rd–30th May; St Mary's (Scilly), 16th–20th May; Tacumshin, 5th June. **Red-rumped Swallow** *Cecropis daurica* Lade Pit (Kent), 9th May; Portland, 11th and 13th May; Old Head of Kinsale (Co. Cork), 14th–15th May; Tonge

(Kent), 14th May; Sandwich (Kent), 18th May; Spurn, 18th May; Blencarn (Cumbria), 20th May; Rattray Head (Northeast Scotland), 23rd May; Bream Cove (Cornwall), 24th May; Maen Porth (Cornwall), 26th–28th May; Dungeness, 30th May to 1st June; Ferrybridge (Dorset), 3rd June; Polgigga, 8th June. **Tawny Pipit** *Anthus campestris* Bryher, 31st May. **Red-throated Pipit** *Anthus cervinus* Fair Isle, 11th–16th May;



Rebecca Nason

190. Red-throated Pipit *Anthus cervinus*, Fair Isle, Shetland, May 2006.

Stef McElwee



191. Savi's Warbler *Locustella luscinioides*, Skaw, Unst, Shetland, May 2006.

Kirr Day



192. Male Red-backed Shrike *Lanius collurio*, The Naze, Essex, June 2006.

Hugh Harrop



193. White-throated Sparrow *Zonotrichia albicollis*, Sumburgh, Shetland, May 2006.

Leasowe (Wirral), 13th May; Calf of Man (Isle of Man), 13th May; Foula (Shetland), 26th May to 1st June. Citrine Wagtail *Motacilla citreola* Tacumshin, 1st–2nd June.

Savi's Warbler *Locustella luscinioides* Skaw, Unst (Shetland), 28th May to 3rd June. Great Reed Warbler *Acrocephalus arundinaceus* Forfar Loch (Angus), 13th–15th May; Guntton (Suffolk), 16th May; Spurn, 27th May; Loch of Kinordy (Angus), 11th June. Subalpine Warbler *Sylvia cantillans* Isle of May (Fife), 8th May; North Ronaldsay, 11th May; Ramsey Island (Pembrokeshire), 23rd–27th May; Pagham Harbour (West Sussex), 25th May; Spurn, 2nd June; Farne Islands (Northumberland), 3rd–4th June. Iberian Chiffchaff *Phylloscopus ibericus* Postbridge (Devon), 8th May to 2nd June.

Isabelline Shrike *Lanius isabellinus* Whitburn, 14th May. Woodchat Shrike *Lanius senator* Bryher, 14th–29th May; Portland, 14th–29th May, with another 27th May; Boyton Marshes (Suffolk), 14th–15th May; Whitburn, 21st–23rd May; Hengistbury Head (Dorset), 31st May; Roughton (Norfolk), 4th June. Rose-coloured Starling *Sturnus roseus* Iona (Argyll), 14th May.

White-throated Sparrow *Zonotrichia albicollis* Sumburgh 13th May, same Quendale (both Shetland), 14th May. Rustic Bunting *Emberiza rustica* Overstrand (Norfolk), 9th June. Black-headed Bunting *Emberiza melanocephala* Bardsey (Gwynedd), 2nd June.



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British Birds publishes material dealing with original observations on the birds of the Western Palearctic. Except for records of rarities, papers and notes are normally accepted for publication only on condition that the material is not being offered in whole or in part to any other journal or magazine. Photographs and drawings are welcomed. Referees are used where appropriate, and all submissions are reviewed by the BB Editorial Board or Notes Panel.

Papers should be concise and factual, taking full account of previous literature and avoiding repetition as much as possible. Opinions should be based on adequate evidence. Authors are encouraged to submit their work to other ornithologists for critical assessment and comment prior to submission. Such help received should be acknowledged in a separate section. For main papers, an abstract summarising the key results and conclusions should be included, but should not exceed 5% of the total length. Authors should carefully consult this issue for style of presentation, especially of references and tables.

English and scientific names and sequence of birds should follow The 'British Birds' List of Birds of the Western Palearctic (1997), with amendments as detailed in *Brit. Birds* 97: 2-5 and listed on the BB website at: www.britishbirds.co.uk/bblast.htm or, for non-West Palearctic species, Dickinson (2003), *The Howard and Moore Complete Checklist of the Birds of the World*. Names of plants should follow Stace (1999), *Field Flora of the British Isles*. Names of mammals should follow Corbet & Harris (1991), *The Handbook of British Mammals*, 3rd edition. Topographical (plumage and structure) and ageing terminology should follow editorial recommendations (*Brit. Birds* 74: 239-242; 78: 419-427; 80: 502).

Contributions should be submitted on disk or (preferably) by e-mail, to the Editor. Most word-processing applications are suitable, but, if you are not using an up-to-date, standard program, it is best to submit two versions, one in the original word-processed format and one in a basic text format such as RTF (Rich Text Format). For contributors without access to a computer, text should be submitted in

duplicate, typewritten, with double spacing and wide margins, and on one side of the paper only.

Hand-drawn figures should be in black ink on good-quality tracing paper or white drawing paper; lettering should be inserted lightly in pencil, while captions should be typed separately. Please discuss computer-generated maps and figures with the Editor before submitting them.

For use in main papers, notes and letters, photographs can be submitted as 35 mm transparencies, high-quality prints or digital images. Digital images should be submitted as TIFF files in either PC or Mac format with a resolution of 300 dpi and the image sized at 15 cm wide. TIFF files should be supplied on a CD-rom. Digital images with a comparable resolution in other formats (e.g. JPEGs), must be saved as high/maximum quality files. Lower resolution images or video-grabs will be used more sparingly, and usually only when there is no alternative (for example, in 'Recent reports'). All digital images must be submitted in their original state with no manipulation (e.g. adjustment of colours, curves, etc.). Digital images can be emailed **ONLY** if they do not exceed 1 MB in size.

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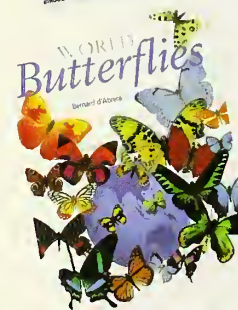
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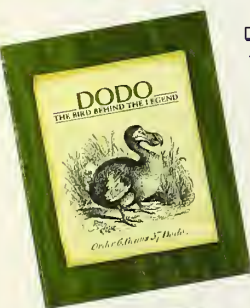
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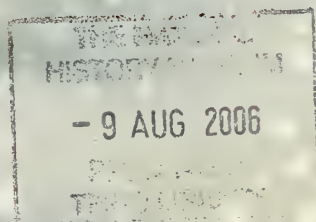
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Fea's Petrel off Scilly:

new to Britain

Ashley Fisher and Bob Flood

ABSTRACT A Fea's Petrel *Pterodroma feae* was seen from a boat approximately 10 km south of Scilly on 8th July 2001. Although there had been several previous sightings of Fea's/Zino's Petrels *P. feae/madeira* in British waters, this sighting constitutes the first accepted record of Fea's Petrel for Britain. The total duration of the event lasted about 12 minutes, during which time the Fea's Petrel flew past the boat on four or five occasions at a distance of no more than 20 m. Close views enabled detailed scrutiny of many key structural and plumage features, and these field observations were supported by a high-quality video sequence. The elimination of Soft-plumaged Petrel *P. mollis* and Zino's Petrel is discussed.

The one thing certain about pelagic trips is that you can never be certain what you will see. The 2000 pelagic season off Scilly had been particularly good, and July was by far the best month. In contrast, the 2001 season had been fairly quiet, the highlights being single Wilson's Storm-petrels *Oceanites oceanicus* on eight dates up to 8th July, and we had become despondent. Our efforts were, however, more than compensated for on 8th July when, out of the blue and quite astonishingly, a Fea's Petrel *Pterodroma feae* appeared at point-blank range off the starboard side of MV *Kingfisher*.

On the evening of 8th July 2001, we were drifting and chumming approximately 10 km south of Scilly at 49°48.573'N 06°11.370'E. Weather conditions were fair. The wind was a moderate (force 3) northwesterly, enough to disperse the smell of the chum and cause drift, but the sea state remained reasonably calm with a slight swell and light waves. Cloud cover was 100%, but thin and high. All in all, conditions were good for a pelagic trip. Bob Flood (RLF) was in the cabin scanning the slick on the port side and Ashley Fisher (EAF) was on deck covering the same area. Nigel Wheatley, along with three visiting birders, including Pete Massey and Mark Ponsford, was watching the starboard side. It had been another quiet evening when, cutting into the silence, we both heard Nigel's distinctive yet perplexed voice from the star-

board side asking, 'What's that?' Given the onset of apathy, this vague and restrained question barely attracted our interest. A few moments later, now flavoured with a touch of panic, Nigel exclaimed, 'What is that?!' EAF instantly pivoted through 180° and almost immediately screamed, 'It's a Fea's! It's a Fea's! IT'S A FEA'S!' In a flash, RLF leapt out of the cabin and without hesitation agreed with EAF.

The bird had approached the bow of the boat from the east and passed the starboard side at a distance of about 10 m, continuing around the stern, roughly to the southwest. During this quick view, we established that the flight action was distinctive and, in general, appeared pratincole *Glareola*-like, buoyant with quick wingbeats and circling glides (cf. Gantlett 1995). It maintained this pattern of flight as it meandered some way off to the southwest. Nobody expected that this dream bird would turn back on itself and pass the boat again; but it did, four or five times, and each time at a distance of no more than 20 m. At each pass we were able to pay particular attention to the crucial features which separate Fea's Petrel from the closely similar Zino's Petrel *P. madeira*, including plumage detail, bill and wing structure, and the bulk of the head, neck and body.

It was immediately apparent to all observers on the MV *Kingfisher* that our bird had a stockier body and much longer wings than

Manx Shearwater *Puffinus puffinus* (also seen that evening). A striking feature was its deep and heavy black bill. The head was thickset, with a dark crown and 'panda-like' smudge marking through the eye. There were smudge markings at the side of the neck, but these did not continue across the breast in a full or even partial band, so the centre of the breast remained completely white. The body was substantial, with a full breast, tapering at the rear to a blunt point at the end of the tail. The underparts (including the breast) were bright white, while the mantle was grey. The wings had both a long 'hand' and a long 'arm', the trailing edge of the primaries showed little or no convex curvature and the 'hand' was clearly pointed. A subtle 'M' was visible across the brown-grey upperwings, while the underwing showed a pattern of greys with a small extension of white onto the base of the under-forewing. Video footage was secured and video grabs illustrate many of the features described above (plates 194–198).

The experience was breathtaking, not only because of the close views, but also because the bird stayed with the boat for so long and swept past at close range on four or five occasions. It was able to glide seemingly without effort low over the sea on bowed wings and yet, in a moment, was able to carry out graceful sweeping turns and circular manoeuvres. It is not possible to describe in words the impact of such a sight on a seabird fan! The *Pterodroma* petrels are near-mythical birds, and to see a Fea's Petrel so well and within sight of home was nothing short of awe-inspiring.

Description

Overall size and structure

In comparison with Manx Shearwater seen that evening: (a) body length roughly the same; (b) head and neck more thickset and body form stockier; (c) wings noticeably longer; and (d) bill a good deal heavier and deeper.

Structural details

Bill: large, heavy, and deep. Head and neck: large-headed and bullnecked. Body: stocky and full-chested, tapering towards rear end. Tail: long and tapered, coming to a rounded blunt point. Wings: long and slim with pointed hand, and minimal convex curvature to the trailing edge of the primaries (apparent in every frame of the video footage).

Plumage

At distance, the bird looked almost monochrome. Head: ostensibly hooded, comprising a dark, dirty-grey crown, darker than neck and mantle, and darker still panda-like smudgy blackish eye-patch. Mantle: grey, contrasting with paler uppertail-coverts and tail. Tail and uppertail-coverts: paler than the rest of the upperparts, appearing pale grey to almost white. Throat and underparts: white. Central breast: clear and unmarked with no more than a grey patch on the sides of the neck and upper-breast, and thus lacking a lateral breast-band. Upperwing: grey-brown (more brown than grey) with an observable but, to some observers, subtle 'M' across the outstretched wings formed by dark primaries and primary coverts, dark secondary, median and lesser coverts, and a dark band across an otherwise grey rump that connected the two 'half-Ms' on each wing. Underwing: at long-range, appeared entirely dark; at middle-range, a small extension of white onto the base of the under-forewing was apparent; and at close-range and also visible in video grabs, a complex of grey shades that formed a broad, dark bar in the region of the median underwing-coverts, and which faded at the carpal joint. This dark bar was accentuated by the conspicuous white inner forewing and a greyer central area extending to the arm and hand. Trailing edge appeared darker than the greyer central area.

Bare parts

Bill black. Legs not visible.

Flight action

Distinctive and that of a typical *Pterodroma*. The following describes the Fea's flight action as caught on video. At times gliding quite effortlessly, low over the sea on bowed wings, punctuated occasionally by two to six wingbeats. The bird would gain momentum with a run of faster wingbeats, and rise effortlessly up to 3–4 metres, turn and complete a full circle on a downward glide before tilting the other way and peeling off in the opposite direction.

Call

Silent, no call heard.

Why Fea's Petrel?

Separation of Fea's and Zino's Petrels requires the utmost care and attention to detail, com-

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Ashley Fisher

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Ashley Fisher

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Ashley Fisher

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Ashley Fisher

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Ashley Fisher

194–198. Fea's Petrel *Pterodroma feae*, at sea, 10 km south of Scilly, 8th July 2001 (video grabs). Note the large, heavy bill, grey hood and blackish eye-patch, the long and slim pointed wings, the minimal convex curvature to the trailing edge of the primaries, blackish underwings with conspicuous white inner forewings, complete lack of breast-band, and the grey mantle contrasting with paler tail and uppertail-coverts (see also fig. 1, p. 398).

bined with exceptional viewing conditions, while the unlikely possibility of a Soft-plumaged Petrel *P. mollis* is more readily addressed. Until the appearance of the Scilly bird, no Fea's/Zino's Petrels seen previously around the coasts of Britain had been sufficiently close, or lingered for long enough, to enable the crucial features to be examined in detail. Now, we were presented with an unprecedented opportunity to clinch the identification to the species level, one way or the other. Although we had no prior experience of positively identified Fea's or Zino's Petrels, RLF

had previously seen two Fea's/Zino's Petrels from Scilly-based pelagics and Soft-plumaged Petrel at sea off Cape Town, South Africa. Subsequently, he has seen Fea's Petrel near Madeira, another positively identified Fea's Petrel off Scilly, and a further three Fea's/Zino's, also off Scilly. In addition, Pete Massey and Mark Ponsford had seen one Fea's/Zino's Petrel while sea-watching from the mainland; but for EAF, this was his first-ever *Pterodroma*, although he has since seen another positively identified Fea's Petrel and two additional Fea's/Zino's Petrels from Scilly-based pelagics. Added to this, both

RLF and EAF are highly experienced pelagic seabirders, typically venturing into the seas around Scilly about 50 times each year between June and October in search of seabirds, in most sea states from balmy doldrum conditions up to force 6 or 7. Consequently, we are extremely familiar with all the likely species that we could encounter, in a range of weather and sea conditions; and were fully aware of all the features that we needed to concentrate on in the event of such an encounter.

Given the outstanding views and supporting video footage of this bird, we knew that the possibility existed that this bird could be positively identified. Excluding Soft-plumaged Petrel was fairly straightforward at the time of observation, owing to the lack of breast-band and whitish tail among other things, but eliminating the closely similar Zino's Petrel required careful attention to detail and critical observation of key features. After 12 minutes of outstanding views, combined with photographic support, we were confident that we had also eliminated Zino's Petrel.

Elimination of Soft-plumaged Petrel

Soft-plumaged invariably has a complete, or near-complete, lateral breast-band (of 250 seen in the southern oceans in March 2006, RLF noted just one with a near-complete lateral breast-band, the remainder being complete), whereas our bird showed a clear and unmarked breast with no more than a grey patch on either side of the neck and upper breast. Our bird also had a dark, dirty-grey crown, darker than the neck and mantle, whereas a Soft-plumaged Petrel would show a 'clean' grey crown, similar in tone to neck and mantle. In addition, the tail of the Scilly bird was paler than the rest of the upperparts, appearing somewhere from pale grey to almost white, whereas the tail of Soft-plumaged is clean grey and similar in tone to the mantle. Crucially, the bill structure of our bird was large, heavy and deep, whereas the bill structure of most Soft-plumaged Petrels is intermediate between that of Fea's Petrel and the much slimmer bill of Zino's Petrel (see Ian Lewington's illustrations in Harrop 2004). We were extremely confident that Soft-plumaged Petrel had been eliminated using this combination of features.

Elimination of Zino's Petrel

Given that the plumages of Fea's and Zino's

Petrels are, to all intents and purposes, identical, their separation relies on a combination of size and structural differences, with Fea's being the larger and heavier of the two species.

In terms of body size and structure, in comparison with Manx Shearwater our bird was about the same length, but stockier, which favours Fea's Petrel. Furthermore, the body was stocky and full-chested, tapering towards the rear end; the bird was large-headed and thick-necked, features which again point towards Fea's, and which are supported by the video sequences. In comparison, Zino's Petrel is said to be decidedly smaller than Manx Shearwater in body size, with a fairly slender and near flat-chested structure, thus tapering to a long narrow rear end, and the head and neck are described as dove-like, not hefty, and more like the head and neck of a 'Cookilaria' petrel (Brinkley 2004). Therefore, the body size and structure are strongly indicative of Fea's Petrel, and given that it is, on average, approximately 50% heavier than Zino's, this difference must be evident in the field.

Bill structure is undoubtedly the single most crucial feature which can clinch the identification. The bill of our bird was large, heavy and deep; a feature noted at the time of observation and again supported in the video sequences. In comparison, the bill of Zino's is described as shallow, even thin, in profile. Reports from observers who have been fortunate to observe Zino's Petrels at sea confirm that the light bill structure gives Zino's a very distinctive appearance and makes it look quite different from Fea's (Brinkley 2004; also see photograph in Fisher 1989).

Wing shape provides further supporting evidence towards a positive identification in favour of Fea's Petrel. In all still images taken from the video footage, and thus when seen in many different positions, the wing shape of our bird is long and slim, with pointed 'hands' and minimal convex curvature to the trailing edge of the primaries. In general, the wing of Fea's Petrel appears long and slim because P10 is longer than P9 (primaries numbered descendantly, P10 being the outermost). In contrast, the wing structure of Zino's Petrel appears shorter and blunter because P10 is the same length as, or slightly shorter than, P9. This issue is important, as it provides an explanation for the 'pointed Fea's vs. blunter Zino's wing-tip theory' (Gantlett 1995; Tove 2001).

FEA'S PETREL
c. 7 MILES S OF SCILLY
8TH JULY 2001
E. A. FISHER.

(1850-1902).

Wings long slim + (sharply) pointed. Underwing largely blackish with obvious white wedges at base of forewing.

Underparts clean white. (No suggestion of breast-band).

Body appeared rather chunky + thickset. 'Full-breasted' / Pot-bellied. (- augmented by larger head).

At certain angles, Secondaries appeared darker than greater-coverts forming narrow trailing edge.

At close range (30m) 'M' pattern (covert-bar) was -

difficult to detect.

Primaries + Primary coverts blackish.

Ear-coverts black, crown slightly paler but with brownish tinge.

Bill large, deep + heavy. Seen clearly at 30m + larger in all proportions than expected! (Bulbous looking).

Similar in size to Mann Shearwater, but noticeably stockier with longer wings + tail, larger, broader head + (significantly) heavier bill.

"Tail long - tapering towards pointed tip. Rump, uppertail-coverts + tail pale grey. Noticeably paler than (+ contrasting with) remainder of upperparts.

Vary Patinade-like in slight - not just due to slight action but mainly to the contrast between black underwings + white body.

Prominent pale crescent at base of greater primary coverts.

Appeared hooded (vaguely recalling Cory's Shearwater). Nape + sides of neck (darkish) grey. Crown + ear-blackish.

Underwing pattern seen to be very complex at close range. (All black when distant).

Often appeared 'capped' - narrow broken line extended to nostril.

Mantle + Scapulars dark (ish) grey. Lower rear scapulars blackish.

- Head large + broad. Vaguely recalling Fulmar.

Upperwing greyish-brown (more brown than grey) with variably prominent (depending on angle + angle of view) blackish 'M' pattern.

At range, appeared monochrome (ie black + white).

Narrowish black 'line' across median coverts.

'Forewing wedges' often 'lost' against background accentuating rakiish appearance of wings.

- 'Arm's hand' severely proportioned.

'Wing tip' sharply pointed - never looked blunt or rounded! Little or no convex curvature to trailing edge of 'hand'.

As viewing distance increased, so did the relative prominence of the 'M' pattern across the upperwings.

Ashley Fisher.

Fig. 1. Fea's Petrel *Pterodroma feae*, at sea, 10 km south of Scilly, 8th July 2001.



Ben Lascelles

199. Fea's Petrel *Pterodroma feae*, at sea, 17 km west of Scilly, 6th September 2004. Note the notch between the tip of the nostrils and the back of the hook at the tip of the upper mandible; this important feature for the elimination of Zino's Petrel *P. madeira* was visible only from photographs.

Including the July 2001 bird described above, we are fortunate to have observed a total of six *Pterodroma* petrels during pelagic trips off Scilly. Although viewing conditions varied, all appeared identical in shape and structure, and there is no evidence to suggest that any of these six *Pterodroma* petrels were anything other than Fea's Petrel. One individual seen particularly well from MV *Sapphire* on 6th September 2004, approximately 17 km west of Scilly, for about ten minutes at close range, has also been accepted as a definite Fea's Petrel (Flood & Lascelles 2004; Rogers *et al.* 2005). On this individual, we were able to see an additional important feature that supported the identification as Fea's Petrel (from photographs, although not visible in the field; plate 199). The bill had a notch-like shape between the tip of the nostrils (naricorn) and the rear of the hook at the tip of the upper mandible (maxillary unguis). In comparison, this area of the bill in Zino's is wedge-like in shape (Harrop 2004).

Ashley Fisher, Trehill, Silvester's Lane, St Mary's, Isles of Scilly TR21 0NA
Bob Flood, 14 Ennor Close, Old Town, St Mary's, Isles of Scilly TR21 0NL

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EDITORIAL COMMENT Colin Bradshaw, Chairman of the British Birds Rarities Committee, commented: 'The assessment of this record perhaps demonstrated the different roles of BBRC and BOURC, and how interaction between the committees can improve the function of both. Most BBRC members had assessed over a dozen records of *Pterodroma* petrels and had a good understanding of what was required of a record for it to prove conclusive at the species level and the point at which they would be prepared to accept the balance of probability. They were comfortable that, given the bird's plumage, the general appearance of a bulky petrel with a heavy bill could be consistent only with Fea's and ruled out the possibility of Zino's. The fact that no individual freeze-frame on the video clinched the shape of the bill was not seen as a major problem, especially as the observers had provided a detailed sketch of the bill shape, and members were all satisfied with the identification.'

'BOURC members examined the record from the slightly different perspective of whether the evidence conclusively proved the occurrence of the species so that it could be placed on the official British List. They were able to compare this record with the bird photographed from the MV *Scillonian* one month later, on which the bill shape could be seen. Large amounts of time were spent examining individual frames on the video and none conclusively showed the bill shape. After considerable discussion, both committees came to the conclusion that the overall impression of the bird was compatible only with Fea's. This record helpfully demonstrates, as mentioned in the 'From the Rarities Committee's files' (*Brit. Birds* 95: 156–165), how boat-based observation has much greater potential for securing difficult vagrant seabird records than land-based observation, owing to duration of observation, proximity to birds and greater photographic opportunities.'

Bob McGowan, Chairman of the British Ornithologists' Union Records Committee, has commented: 'As mentioned by Jimmy Steele (pp. 404–419) and by Andrew Harrop in his review of the 'soft-plumaged petrel' complex (*Brit. Birds* 97: 6–15), birders have been excited yet perplexed by *Pterodroma* petrels in the North Atlantic for over 20 years.'

'Given the paucity of records and the challenges in obtaining good views and/or photographs, it was not surprising that development of reliable identification criteria involved a lengthy gestation period. Perhaps a contributory factor is a complete lack of specimen records (historical or recent) that would have otherwise given some tangible identification clues to the taxa involved. Furthermore, the increase in frequency in records during the 1990s appears to represent a recent, genuine status change in British (and North American) waters.'

'The Fea's Petrel seen in July 2001 afforded the observers a perfect opportunity to clinch identification to species level, as the bird made a handful of close flights past the boat over a period of 12 minutes. Detailed notes supported by video clips formed the basis of Ashley Fisher and Bob Flood's submission.'

'There was considerable support for the record within BOURC, though a few members expressed concern that the visible bill details could not effectively rule out Zino's Petrel. For example, as the smallest Fea's bill length measured by Zino & Zino (1986) was only 1 mm longer than the largest Zino's bill (26 mm), it was considered that resolution of such a difference in the field presented a significant identification challenge. Relative measurement of the bill from video stills proved impossible owing to image pixellation. The aspect of bill size and shape was discussed exhaustively by members. During the circulation, however, it became clear that an overall impression of bulkiness to the bill was of greater value than precise dimensions, and Fea's Petrel on the whole appeared more robust than Zino's Petrel. It was agreed that this aspect of the description did indicate such a distinctive, bulky bill; in conjunction with the other details, this clearly pointed to Fea's Petrel, so permitting its acceptance to Category A of the British List.'

Fea's Petrel in the Western Approaches

James S. Lees

ABSTRACT A Fea's Petrel *Pterodroma feae* gave prolonged views to several hundred birders from the MV *Scillonian III* on an annual pelagic trip in August 2001. This well-documented record was for a short time the first accepted record of this species in Britain. However, an individual preceding it by 35 days was subsequently accepted as the first British record. The following article describes the circumstances surrounding this exciting find and explains the features which allowed the bird to be identified as a Fea's Petrel.

During the early hours of 12th August 2001, almost 300 birders, myself included, boarded the MV *Scillonian III* at Penzance, Cornwall, for its fourteenth annual pelagic voyage into the Western Approaches. As sea conditions looked promising, with a strong southwesterly wind blowing, the trip seemed certain to be a success. Little did we know that we were in for an interesting ride, featuring seasickness and disappointment, and culminating in an extreme adrenalin rush.

Shortly after departing at 05.00 hrs, we encountered our first European Storm-petrels *Hydrobates pelagicus*, to be followed quickly by deteriorating weather conditions. We had been at sea for only a couple of hours when the wind picked up considerably and brought with it rain, thick mist, and an incredible swell. Waves crashed over the boat, washing away the spirits of the hopeful birders and several people started mumbling about how they wished they had never come aboard. The cold and damp mood was definitely not helped by the many who had begun to be seasick. The situation remained dire until, some five hours into the voyage and about 40 km from Scilly, the visibility gradually began to improve and birds started to appear. Things improved further as we stopped close to two trawlers, which were accompanied by approximately 200 European Storm-petrels and an adult Sabine's Gull *Larus sabini*. Although a great morale booster, these birds were still not the Wilson's Storm-petrels *Oceanites oceanicus* that we were hoping to see. By now, I was feeling much better and enjoying a midday

snack, and my spirits were further raised as I spotted a Great Shearwater *Puffinus gravis*, although many missed this bird as they were either sleeping or still suffering from the after-effects of the previously violent sea conditions. Unfortunately, that short period of excitement quickly vanished along with the shearwater, and things remained quiet for some time. Many birders were of the opinion that things were never going to improve, and that we might as well turn the *Scillonian* around and head back to Penzance.

Just after midday, we arrived at the famous 'Wilson's Triangle', an area of sea about 100 km southwest of Scilly, at 49°08'N 06°54'W. By now, the mist and rain had finally cleared, the sea was a good deal calmer, and the sun had even begun to poke through the clouds. Having reached our destination, it was with fingers crossed that a few brave men began throwing the evil-smelling chum from the back of the boat in the hope of attracting some of the sought-after seabirds. We slowly circled around the chum slick and waited patiently. Seemingly out of nowhere, birds began to appear in order to investigate. Quickly, large numbers of Northern Gannets *Morus bassanus* and European Storm-petrels assembled, circling and weaving around the boat and among the waves; a welcome sight but there were still no Wilson's Storm-petrels to be seen.

Shortly after the second Great Shearwater of the trip came in close, a lot of incomprehensible shouting arose from the back of the boat. Steve Rogers was clearly onto something exciting and everyone was frantic to hear what he

Gary Bellingham



Gary Bellingham



Gary Bellingham



200–202. Fea's Petrel *Pterodroma feae*, at sea, c. 100 km southwest of Scilly, August 2001.

was saying, and to see what he was watching. People behind him could tell it was something good, and assumed it to be a Wilson's Storm-petrel. During the ensuing chaos we heard the unforgettable announcement over the ship's tannoy system: "SOFT-PLUMAGED PETREL" IN THE WAKE!"

That was when the adrenalin rush *really* kicked in and complete pandemonium broke out. People scrambled frantically to try to see this amazing bird and pushed in to get a good spot for a clear view. As hundreds of seabirds were flying around, it was impossible to pick out the petrel quickly and for many, myself included, there was a period of panic as we thought we would miss it completely. Finally, I got onto the bird just as it sheared off and away from the boat. Although I was greatly relieved to have seen it, I was also hugely disappointed that it had not been in view for very long. Even though about only half of the birders on board had managed to see it, a huge cheer erupted around the

boat. We were determined to have another look, so the *Scillonian* turned and slowly steamed towards the distant chum slick and the direction in which the bird had been heading when it disappeared. Several minutes later, to the relief of all on board, the petrel reappeared and flew towards the bow and along the starboard side of the ship. An eerie silence then befell the assembled birders, as everyone soaked up this once-in-a-lifetime opportunity to watch a Fea's Petrel *Pterodroma feae* at close range in British waters. In total, it spent about 80 minutes feeding close to the boat, and everyone on board had fantastic views as it flew between the waves to feed on the chum.

The first thing that really struck me about the petrel was its behaviour: the way it flew was strange, and quite different from the flight action used by any other species of seabird I had seen. Initially, it would glide effortlessly across the water and then suddenly and sharply bank; it would then rise to quite a height and almost turn back on itself before repeating the entire sequence.

The bird was approximately the same size as a Manx Shearwater *Puffinus puffinus* but was structurally quite different. It was big-chested with a thick neck and reasonably long, pointed wings. Although there were only a few colours apparent on the petrel, these were particularly striking, making this a most distinctive bird. The most obvious features were the dark wings contrasting with whiter-than-white body parts. The throat, breast, belly, flanks and undertail-coverts were entirely white. Above this, a band of grey extended over the neck, and a dark-grey to black mask covered the eye, making the bird resemble a bandit. The overall tone of the upperwings was grey, becoming darker towards the wing-tips, and the tail was a paler shade of grey. The classic dark 'M' to the upper surface of the wings was not always obvious and it was a feature that depended on the light and the angle

of the bird.

Luckily, the petrel came in quite close to the boat on several occasions, and during these passes, it was easy to see the thick, heavy bill, the feature that clinched the identification as Fea's Petrel. On one occasion, I was fortunate to be standing at the front of the boat when it came in and landed quite near to the bow. The most memorable thing about this experience was that when the bird took off, running along the surface of the water, its pink legs and feet were clearly visible. During its prolonged stay, many photographs were taken of the bird, and examination of these served to support the identification as Fea's Petrel. Ultimately, it was the quality of these images that led to the acceptance of this bird as Fea's Petrel.

As we began the return journey to Penzance, the Fea's Petrel, along with a Sooty Shearwater *P. griseus* and hundreds of European Storm-petrels followed us for some distance. The excitement of the afternoon's find also carried us home, and the dreary and frustrating start to the day was forgotten completely. Even though the pelagic started off badly, with poor weather conditions dampening spirits, the day was considered a huge success.

After arriving home I thought I would never have another chance to see such an amazing seabird in Britain. Luckily for me, however, I saw one only a year later, while working on North Ronaldsay, Orkney. Again, it was the same characteristic flight behaviour that was noticeable, even at long range. In fact, watching the North Ronaldsay bird from land was beneficial in the sense that this behaviour of turning back on itself was extremely obvious, probably more so than from a boat. Nonetheless, I will never forget my first Fea's Petrel – the boat trip out was unforgettable, the birders good company, and the Fea's Petrel memorable beyond belief!

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EDITORIAL COMMENT For a short time, this sighting represented the first accepted record for Britain, since it was accepted by BOURC at a time when the July 2001 record (see pp. 394–400) was still under consideration. A press release confirming its acceptance by BOURC was issued on 15th September 2005. As with the earlier record, the photographic documentation, in particular the superb photographs by Gary Bellingham, was crucially important to BBRC and BOURC members in deciding the outcome of the record-assessment process.

From the Rarities Committee's files:

Do we know what British 'soft-plumaged petrels' are?

Jimmy Steele

ABSTRACT Sightings of 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* in British waters have increased significantly in the last 20 years, and there has been a growing realisation that all the British birds show a suite of characters associated with Fea's Petrel *P. feae*. Fea's Petrel has recently been accepted onto the British List, and there are now three accepted records for Britain, all seen in the Southwest Approaches, in July 2001, August 2001 and September 2004 (see pp. 394–403). The steady accumulation of records has focused attention on the criteria necessary to assess claims of this species. This paper summarises the current situation, reviews the identification of Fea's Petrel in comparison with Zino's *P. madeira* and Soft-plumaged Petrel *P. mollis*, and attempts to establish those characters which are required for records to be accepted, either at the species level or as being of the 'soft-plumaged petrel' complex.



The 'soft-plumaged petrel' complex comprises five taxa that were, until recently, considered conspecific. Most authorities now consider that there are three separate species: Soft-plumaged Petrel *Pterodroma mollis* (with two subspecies, *mollis* and *dubia*), Fea's Petrel *P. feae* (with two subspecies, *feae* and *deserta*) and Zino's Petrel *P. madeira*. These taxa were traditionally known as a single species, 'Soft-plumaged Petrel', and this paper refers to them collectively as the 'soft-plumaged petrel' complex. Although this name is somewhat confusing, there is no obvious alternative that neatly packages the three species together, and which is equally well understood and accepted. In his review of the taxonomy, distribution and identification of the group, Harrop (2004)

established a baseline against which past and future European records of these three species can be judged; in part, this paper is intended to build upon those foundations.

The two Fea's Petrels photographed at sea off Scilly in 2001, and described elsewhere in this issue (pp. 394–403), were subject to extremely detailed analysis. The main aim of this paper is to analyse the descriptions of all the remaining accepted British records, up to and including 2000, to establish whether there is any evidence to suggest that more than one species is occurring. This analysis thus concentrates on the records before the first accepted Fea's Petrel, in July 2001; a period when separation characters of the three species were less well understood and when field observations were, by default,

less focused on key criteria than they would be today. Assigning records to species level is explicitly not the aim of this paper; however, by looking for consistent themes and exceptions in the records as a whole, some interesting patterns emerge.

The occurrence of 'soft-plumaged petrels' in British waters

The first British record of 'soft-plumaged petrel', seen by Tim Inskipp off Dungeness, Kent, on 15th October 1983, was reported without fanfare as a 'gadfly petrel' in the Recent reports section of *BB* (*Brit. Birds* 77: 38; Rogers *et al.* 2004). The second for Britain, off Porthgwarra, Cornwall, on 12th–14th August 1989 (Rogers *et al.* 1992, 1994), was seen by many more people and was greeted with widespread incredulity. Had the Porthgwarra bird (or, possibly, birds) also been seen by only a single observer, it might have created much less of a stir. It was, however, seen by a steadily increasing band of observers on the second day, and became almost twitchable by the third day, when it was assumed that a single individual was following the circuitous feeding movements of other seabirds off Porthgwarra (Rogers *et al.* 1992). There is no doubt that the number of observers who submitted high-quality descriptions helped to smooth its path through BBRC. When that record was first accepted, in the early 1990s, it was tempting to consign it to the 'remarkable seabird' category, along with Aleutian Tern *Onychoprion aleutica*, Ancient Murrelet *Synthliboramphus antiquus* and perhaps Swinhoe's Storm-petrel *Oceanodroma monorhis*. The third record, concerning two birds off Flamborough Head, East Yorkshire, in September 1991 (Rogers *et al.* 1995), appeared, on the face of it, even more remarkable. However, another east-coast record, in Northumberland in September 1993, followed by two birds in the Irish Sea – singles off Bardsey, Gwynedd, in September 1994 and Formby Point, Lancashire, in September 1995 – suggested that 'soft-plumaged petrels' were occurring with increasing frequency in British waters (Rogers *et al.* 1996, 1997). Appendix 1 summarises all

accepted records of 'soft-plumaged petrels' recorded in British waters up to and including 2004.

Events in Ireland were closely matching those in Britain, with single birds reported from Old Head of Kinsale, Co. Cork, in August 1989 and August 1992; Cape Clear, Co. Cork, in August 1990 and August 1993; St John's Point, Co. Down, in August 1991; Galley Head, Co. Cork, in September 1991, August 1992 and October 1992; and Mizen Head, Co. Cork, where two were seen on 24th August 1994 (Appendix 2). Interestingly, both Dymond *et al.* (1989) and Enticott (1999) included a *Pterodroma* petrel seen in September 1974 off Cape Clear as a 'soft-plumaged petrel' (and this has subsequently been accepted as Zino's/Fea's Petrel by IRBC), suggesting that their occurrence in British and Irish waters may not be an entirely 'new' phenomenon.

A remarkable six birds appeared in 1996, spread widely throughout British waters from Cornwall and Scilly to southwest Wales, northern Scotland and the North Sea. With a further three records from Ireland, 1996 proved to be a watershed for 'soft-plumaged petrel' in Britain. The rest is history. Accepted records now extend all around the British coast, even reaching beyond 60°N off Shetland, the most northerly record to date. The English east coast has accounted for a significant proportion of records, but the coasts of southwest England remain the most likely region to encounter these birds in Britain. Despite the early sightings, the rapid rise in records through the 1990s is difficult to reconcile with anything other than a genuine change of status in British and Irish waters.

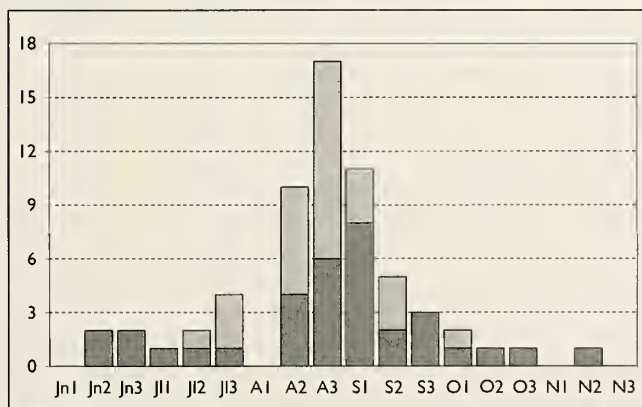


Fig. 1. Accepted records of 'soft-plumaged petrels' *Pterodroma mollis/madeira/fea* recorded from British (dark) and Irish (pale) waters, organised in ten-day periods between June and November.

Interestingly, a similar pattern of increase off the east coast of the USA was apparent over an almost identical period. Here, birds were mostly seen from boats off the coasts of North Carolina and Virginia, from 1988 onwards (Tove 1997). One seen and photographed off Nova Scotia in 1997 was the first record for Canada (Hooker & Baird 1997).

The global status of Zino's, Fea's and Soft-plumaged Petrel

With a breeding population estimated recently to be some 65–80 pairs (cf. 20–30 pairs according to BirdLife International 2000), Zino's Petrel remains one of the world's rarest seabirds, although its conservation status has recently been downgraded from Critical to Endangered as a result of more breeding pairs being discovered on the island of Madeira (<http://www.birdlife.org/datazone/species/index.html?action=SpcHTMDetails.asp>). This global rarity, together with the fact that the breeding season on Madeira extends from late March through to October, when the young fledge (a period that coincides with most 'soft-plumaged petrel' records in British waters), makes the appearance of Zino's Petrel in the western North Atlantic at this time unlikely, although by no means impossible.

Fea's Petrel is classified as Vulnerable by BirdLife International (2004). The nominate subspecies breeds on the islands of Fogo, Santo Antão, São Nicolau and Santiago in the Cape Verde archipelago, where the population is estimated to be around 500–1,000 pairs (Snow & Perrins 1998). In addition, the subspecies *P. f. deserta* breeds on Bugio in the Desertas Islands of Madeira, where its current population is estimated to be some 170–260 pairs (BirdLife International 2004). On the Cape Verdes, the main laying period is from mid December to late February, while in the Desertas the main laying period is from mid July to mid August (cf. Zino's Petrel, which generally lays between mid May and mid June; Snow & Perrins 1998).

Unlike the two previous species, Soft-plumaged Petrel breeds on oceanic islands in the southern hemisphere, where the population is believed to number some tens of thousands of pairs. The nominate form breeds on Gough and Tristan da Cunha in the South Atlantic, while *P. m. dubia* is a common breeding bird on Marion, Prince Edward, Crozet and Kerguelen Islands in the Indian Ocean, and on the

Antipodes Islands, south of New Zealand. Currently, there is just one accepted record of Soft-plumaged Petrel in the Western Palearctic: at Eilat, Israel, on 25th March 1997. There are no claims of this species from the North Atlantic.

Assessing records of the 'soft-plumaged petrel' complex

To many birders with a particular interest in seabirds, a 'soft-plumaged petrel' is one of the most enigmatic and exciting birds on the British List. It is distinctive, globally rare and, in its own way, spectacular to watch; and its occurrence is difficult to predict. However, for those fortunate enough to see one, there remains a nagging problem. The taxonomic issues and the associated identification problems mean that, unless individuals are seen extremely well and, ideally, photographed, doubt must remain about whether they can be assigned to a given species with total confidence.

In most cases, the identification of Soft-plumaged Petrel can be addressed with a fair degree of confidence in terms of plumage and structural features, although some birds remain problematic. Separation of Fea's and Zino's Petrels is a completely different proposition, particularly without photographic or biometric evidence, and (arguably) positive identification is effectively impossible from land. The key separation features rely entirely on biometrics and structure (see Harrop 2004). Despite some quite large differences, such information is extremely difficult to assess reliably in the field. Increasingly, the problem has been addressed by using the probability of occurrence to categorise records: the possibility of Zino's is eliminated on the basis of its global rarity and all birds are assumed to be Fea's. On the face of it, this doesn't seem unreasonable, based on their status as we know it (see above); however, it is worth remembering that Fea's Petrel is itself a globally rare bird, and that so little is known about either taxon that it is possible that both species occur in British waters.

In terms of record assessment and statistics, BBRC has a problem. The Committee could simply go with the flow and just accept that any non-photographed 'soft-plumaged petrel' is actually Fea's Petrel; or it could take a hard line and consider that anything without a perfect photograph is not identifiable. The question is not as trivial and introspective as it usually is with problems such as this. The change in status

of 'soft-plumaged petrels' in northern waters can, perhaps, be attributed to environmental changes such as sea temperatures or feeding conditions. This change in status may therefore have a political dimension, for example as an indicator of wider environmental change. This is easier to explain if individuals within this complex are described in terms of a named species (thus, like it or not, granting them political status), rather than a scientifically realistic, but less tangible 'either/or'.

Methods

A qualitative approach has been used for this analysis. Every record of 'soft-plumaged petrel' between 1989 and 2000 that has been assessed and accepted by BBRC has been comprehensively reviewed. It is an indication of both the distinctiveness of the birds and the quality of the descriptions that relatively few records have not been accepted during this period. Data on the key separation features for the three species, *mollis*, *feae* and *madeira*, have been extracted in the form of the narrative phrases used by observers in their descriptions. When submissions were received from more than one observer, all key phrases were extracted, but only those that best described the feature con-

cerned are included in the tables (tables 1 & 2). Where clear discrepancies between descriptions exist (for example, if one observer said that the bird was sharp-winged and the other said it was round-winged), then both are reported. Generally, the most precise descriptions are reported but in the case of some very similar descriptions they have either been amalgamated to give a more concise appraisal of the feature, or reported together. In such cases, great care has been taken to ensure that the original meaning has not been changed.

The key areas for which data are reported here are as follows:

1. Separation of Soft-plumaged Petrel from *Fea's* and *Zino's* Petrels

Particular attention is paid to the pattern of the underparts, specifically any suggestion of a breast-band, and tail colour. Tail shape is probably less relevant but is also reported. Head pattern is not used owing to lack of sufficient detail in descriptions.

2. Separation of *Fea's* Petrel and *Zino's* Petrel

Overall size, bill structure and wing shape are analysed. These are all highly subjective features.

Table 1. Light conditions, underpart and breast colour, tail shape and tail colour extracted from selected descriptions of 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* seen in British waters between 1989 and 2000, and accepted by BBRC. Scientific names of species mentioned: Manx Shearwater *Puffinus puffinus*.

	Light	Underparts/breast	Tail shape	Tail
12th–14th August 1989, Porthgwarra Cornwall	bright and sunny, behind, overcast on 14th	'white and clear' 'no breast-band' 'dark patch on breast sides'	'fairly long and tapered'	'almost white' 'contrasting pale' 'paler than back'
6th September 1991, Flamborough, East Yorkshire (two birds)	sunny against, though highish, then in favour	'greyish-brown shoulder-patch' otherwise 'pure white from throat to undertail-coverts'	'tapering rear end'	'white-based, silvery grey', 'outer third paler than centre'
5th September 1993, Hauxley, Northumberland	fair and sunny, with low light from behind	'clean white'	'longer than Manx'	'slightly paler than upperparts'
5th September 1993, Farne Islands, Northumberland	cloudy, fading light	'clean white'	'tapered and long rear end, long tail'	'contrasting pale grey'
10th September 1994, Bardsey, Gwynedd	'good', sunny (oblique) with some low cloud	'white, no breast-band'	'very attenuated rear end'	'slightly lighter than mantle and contrasting with darker band on upper rump'

Table 1 cont.	Light	Underparts/breast	Tail shape	Tail
8th September 1995, Formby Point, Lancashire	overcast, but sharp	'no breast-band, possibly smudge on breast sides'	'quite pointed'	'pale grey, almost whitish'
11th June 1996, Gwennap Head, Cornwall	overcast and dull, misty further out, visibility over a mile	'white, no breast-band, partial or otherwise'	'narrow and tapered'	'paler than upperwing and mantle'
25th June 1996, sea area 'Fair Isle'	bright morning sunlight from behind	'grey on breast side, no breast-band'	'rather attenuated'	'paler grey than upper wings, as mantle'
18th August 1996, at sea, west of Scilly	bright, but light thin cloud cover, indirect sunshine	'smudge on lateral nape, no breast-band'	'pointed tail'	'very pale, almost white'
13th September 1996, Newbiggin, Northumberland	bright, low evening sun from directly behind	'clear white'	'long, tapered rear end'	'paler grey than the (pale grey) mantle, contrasting with dark rump-patch'
20th September 1996, Farne Islands	sharp, but mostly cloudy (7/8), against the light	'no semblance of breast-band'	'tapered to a blunt end'	'contrasting pale grey'
4th October 1996, Strumble Head, Pembrokeshire	variable (seen on three occasions) sunny spells, light from behind	smudge on neck sides suggesting slight breast-band	'tapering with rounded end'	'distinctly pale grey'
26th June 1997, north Norfolk	overcast	'white, like Manx' 'grey neck-sides'	'long and pointed'	'much paler grey than rest of upperparts' some observers felt it was 'almost white'
24th August 1998, Newbiggin	bright but cloudy	clean white, no breast-band'	'tapering rear end'	'appeared white or pale grey'
12th June 1999, Flamborough	overcast, bright	'white, definitely no breast-band' 'greyish neck-sides'	could not be determined	'pale grey, paler than upperparts'
17th August 1999, Prawle Point, Devon	dull, showery, overcast	strikingly white	'appeared pointed'	'looked like a "pair of wings" because of pale head and tail'
24th & 31st August 1999, at sea, off Scilly	bright, evening light	'all white, with steely grey shoulder-patches' One observer described 'incomplete breast-band', another 'grey breast-sides ... no breast-band'.	'long, thin tapering rear end'	'very pale, even white' and 'palest part of upperparts ... powder blue'
26th August 1999, Porthgwarra	good, slightly against initially?	'completely white... indistinct darker breast-sides'	'long and clenched'	'clearly paler grey than uppers'
19th November 1999, Farne Islands	dull and drizzly	'white from chin to tail tip'	'tapering to sharp point'	'pale grey and contrasting with mantle'
19th November 1999 St Mary's Island, Northumberland	very poor	'clean white'	not described	no contrast reported

The presence of other species for direct comparison can often be a critical issue when estimating size and structure, as any experienced seawatcher who has watched juvenile skuas *Stercorarius* on passage can testify. Whether this was the case was not always clear from the description, so a fairly conservative approach has been taken and this is reported only where it is explicit from the description that direct comparison was possible. Light conditions, which may affect the perception of tail colour and, possibly, the presence/absence of a breast-band, are also included within the separation features for Soft-plumaged Petrel. Other characters, including underwing and upperwing colour, and flight pattern, were also reviewed, but are reported separately and are not relevant for specific identification.

Findings

Table 1 describes the prevailing light conditions during observations, and includes comments on underpart and breast colour, along with tail shape and colour. It is clear that no record describes anything other than a clear and unmarked central breast. Some descriptions mention a grey patch on the sides of the neck

and upper breast, a feature characteristic of the two North Atlantic taxa, but many make no mention of this, simply describing clean white underparts. One observer, describing a bird off Scilly in 1999 used the term 'incomplete breast-band' but other descriptions of the same bird indicate very clearly that this refers to no more than the grey neck-sides.

Tail colour is described well by most observers and almost all describe the tail as paler than the rest of the upperparts, varying from 'paler grey' through to 'almost white'. Light conditions varied considerably and this will have affected the observers' perception of the colours observed. Tail shape is described variably, although in a few instances there is relatively little information on this feature in the description. Where it is described, the terms 'long', 'tapered', 'rounded' and 'pointed' are widely used.

Table 2 presents data on the presence of comparison species, in addition to comments relating to the size and overall structure, bill structure and wing shape. Of these, direct size comparison is probably the most useful and least subjective. Size comparisons almost invariably relate the size of the bird to Manx Shear-

Table 2. Comments on comparison species, size, bill structure and wing shape extracted from selected descriptions of 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* seen in British waters between 1989 and 2000, and accepted by BBRC. Scientific names of species mentioned: Fulmar *Fulmarus glacialis*, Cory's Shearwater *Calonectris diomedea*, Sooty Shearwater *Puffinus griseus*, Manx Shearwater *P. puffinus* and Kittiwake *Rissa tridactyla*.

	Direct comparison	Size	Bill structure	Wing shape
12th–14th August 1989, Porthgwarra, Cornwall	yes: Manx/Sooty	'similar to Manx', 'possibly heavier-bodied'	'stubby/hefty'	'undeniably long' 'long, swept-back, slimmer than Manx' 'sickle/scythe shape'
6th September 1991, Flamborough, East Yorkshire (two birds)	yes: Fulmar	'nearest to Manx'	'large and dark'	'shorter/broader than Manx, sharp tips' or 'long tapered wings with broad bases and sharp tips'
5th September 1993, Hauxley, Northumberland	no	'as Manx, but bulkier and broader-winged'		'pointed tips' 'proportionately shorter than Manx?'
5th September 1993, Farne Islands, Northumberland	no	'similar to Manx'		'longer than Manx... swept back'
10th September 1994, Bardsey, Gwynedd	yes: Manx	'similar to Manx, but longer in body and wings'		

Table 2 cont.	Direct comparison	Size	Bill structure	Wing shape
8th September 1995, Formby Point, Lancashire	no	'similar to Manx'		'swept back to tips'
11th June 1996, Gwennap Head, Cornwall	yes: Manx	'similar to Manx Shearwater'		'narrower and slightly longer than Manx with pointed hand'
25th June 1996, sea area 'Fair Isle'	no	'slightly smaller than Manx'		
18th August 1996, at sea, west of Scilly	no	'slightly larger than Manx'	'chunkier than Manx'	'long in arm and hand, pointed tip'
13th September 1996, Newbiggin, Northumberland	yes: Manx/Sooty	'similar to Manx, slightly smaller than Sooty'		'long, narrow and very pointed'
20th September 1996, Farne Islands	yes: Fulmar	'similar to Manx'		'long, swept back, "all wings"'
4th October 1996, Strumble Head, Pembrokeshire	yes: Manx	'similar to Manx' 'longer wings'		'longer than Manx and fairly pointed tips'
26th June 1997, north Norfolk	no	'slightly larger than Manx, longer wings'	'deep and hefty'	'longer-winged than Manx, hand 30% longer than arm' 'points slightly rounder than Manx' 'extremely long and pointed hand'
24th August 1998, Newbiggin	yes: Fulmar	'slightly larger than Manx, longer wings, wings as long as Fulmar'	'substantial' (one observer), specifically not determinable by others	'broad-based and tapering... pointed tips'
12th June 1999, Flamborough	no	'slightly larger than Manx'		'long, pointed, broader than Manx'
17th August 1999, Prawle Point, Devon	no	'similar to Manx, if not a little larger'		'long wings, pointed tips' 'extremely pointed at tips'
24th & 31st August 1999, at sea, off Scilly	no	'similar to Manx'	'stubby'/'stuck on'	'long-winged and slender'
26th August 1999, Porthgwarra	yes: Cory's Shearwater	'appeared somewhat larger than Manx, smaller than Cory's'		'thin and pointed wings' 'hand roughly equal in length to arm'
19th November 1999, Farne Islands	yes: Kittiwake	'approximately the same size as Kittiwake... Manx Shearwater size'	'quite broad... tubenose structure'	'long, pointed wings'
19th November 1999, St Mary's Island, Northumberland	no	'considered to be slightly larger than Manx'		'proportionately longer and thinner than Manx, pointed tips' 'arm equal to hand in length'



Hugh Harrop



Hugh Harrop

203 & 204. Fea's Petrel *Pterodroma feae*, Bugio, Madeira, August 2005. A clear view of the dark underwing is a critical point in terms of assigning a bird seen on a seawatch or from a boat to the 'soft-plumaged petrel' complex. The pattern of the underparts, with a clean white breast and, at most, grey sides to the neck, is one of the key features by which, given good views, Soft-plumaged Petrel *P. mollis* can be eliminated.

water *Puffinus puffinus*, the species to which it is superficially most similar in a British context. Overwhelmingly, the descriptions use the phrase 'similar to Manx Shearwater' or a derivative of this. Other descriptions stress the similarity to Manx Shearwater but include more detail, such as 'possibly heavier-bodied' for the 1989 Cornwall bird; 'similar to Manx but longer in body and wings' when describing the 1994 Bardsey bird; while the 1996 Northumberland bird is described as being 'very similar to Manx, slightly smaller than Sooty Shearwater *P. griseus*'. Only one record, of one seen in sea area Fair Isle in June 1996, suggests a smaller bird; but this particular individual was observed from a boat, where observation conditions and size evaluation can be particularly difficult, and where there were no comparison species available.

There are eight descriptions that include a direct comparison with a seabird of similar size and structure, as well as a description of a bird seen alongside a Kittiwake *Rissa tridactyla*. Of these, two were seen with Manx Shearwater only, two with both Manx and Sooty Shearwaters, three with Fulmars *Fulmarus glacialis* and one (seen from a boat, which may make comparisons more difficult to judge) with Cory's Shearwater *Calonectris diomedea*. All stress the similarity to Manx Shearwater, although four of them suggest either a slightly larger or heavier bird, and all eight emphasise the longer wings of the petrel in comparison; in several instances specifically noting the greater wing length compared with Manx. One of the birds seen off Flamborough in 1991 has somewhat contradictory elements regarding the wing shape and structure. One observer commented on the long, pointed wings, while another considered the wings to be shorter and broader than those of Manx, though still with pointed tips. In this case though, the bird is also described as being bulkier than Manx Shearwater.

Bill structure was rarely described. This is often a difficult feature to judge on a seabird at any range, or against a dark sea; moreover, the importance of bill structure to the identification process has not, until recently, been fully appreciated. The few records which do provide details of bill structure describe it as 'stubby/hefty' (Cornwall, 1989), 'large and dark' (East Yorkshire, 1991) or 'chunkier than Manx' (Cornwall, 1996). A petrel that flew close inshore past several north Norfolk sites in overcast condi-

tions in June 1997 was particularly well documented, and the bill is described as 'deep and hefty'. The lucky observer of a very close and well-described bird which flew past the Farne Islands in November 1999 commented on the size of the bill and even saw the tubenose appearance quite clearly. In most cases, however, even in the best of field conditions, the precise bill structure may never be apparent.

Wing shape has been suggested as a useful identification feature to separate Fea's from Zino's Petrel; this again is a subjective character, and difficult to describe with real accuracy. Nevertheless, it would be interesting if there was any consistency across the records. It is a feature that has clearly impressed observers (table 2), and every description has described wing shape. Some have emphasised the length and wing set – 'longer than Manx, swept back' – while most have emphasised the wing-tip shape, with 'pointed tips' appearing in many descriptions. Overall summaries are frequent; comments such as 'long, narrow and very pointed', used to describe the 1996 Northumberland bird, could summarise a number of descriptions. One description, from Northumberland in 1993, questions whether the wings may have been proportionately shorter than those of Manx Shearwater, but also mentions the pointed tips. Descriptions of the well-watched 1997 north Norfolk bird also differ. One observer describes the wings as more rounded than those of Manx, while what was undoubtedly the same bird seen a few minutes later was described as having an 'extremely long and pointed hand'. The dubious value of wing structure as a field character is discussed in some depth by Harrop (2004), and this is well illustrated by inconsistencies in the descriptions of the Norfolk record. Descriptions of the same individual suggest that observers' perception of the ratio of 'hand' to 'arm' varies widely, from the hand being 30% longer than the arm, to the two being of equal length. This sheds some light on the reliability of assessments of structure, even by highly experienced observers.

Other aspects of the descriptions

Flight and behaviour

Even in fairly calm conditions, the characteristic *Pterodroma* flight is an extraordinary, almost flap-free, switchback flight, with frequent towering glides. It is quite unlike that of other seabirds likely to occur in British waters and many



Hugh Harrop



Hugh Harrop

205 & 206. Fea's Petrel *Pterodroma feae*, Bugio, Madeira, August 2005. From above, the markedly paler tail of Fea's and Zino's Petrels *P. madeira* is a key feature in ruling out Soft-plumaged Petrel *P. mollis*. Eliminating Zino's Petrel is much more problematic, and relies chiefly on structure, notably differences in bill structure and wing structure. Even in high-quality photographs such as these, and plates 203 & 204, it is not easy; but the bill of Fea's is relatively chunky, the tube-nostrils being quite prominent with the suggestion of a short and rather square notch between the nostrils and the back of the large hooked tip on the upper mandible. This pattern is not as clear-cut as has been described, however, and is difficult to determine, even on these images.

descriptions of the British records discuss this in some detail. Although some less experienced observers may see similarities between this flight behaviour and that of the larger shearwaters, or even Fulmar, in British waters only 'soft-plumaged petrel' really throws itself about with the characteristic *Pterodroma* gusto. This is a feature that is perhaps better seen during a land-based seawatch than from the deck of a moving boat. There are subtle variations among the described flight patterns, some birds appearing to tower less, in particular those involved in feeding activity, while some observers considered that the sequence of towering and zig-zagging followed a repetitive cycle. Good descriptions of flight pattern are critical for assigning the birds to the genus but, as far as we know, are not at all useful when assigning individuals to species. Some subtle differences have been described between Soft-plumaged and Fea's Petrels, but it is doubtful whether descriptions from observers with anything other than huge experience of both species, in differing conditions, could be used reliably. The flight of Zino's Petrel has not been described in the literature in any meaningful way.

Head pattern

Harrop (2004) considered that there may be diagnostic differences in the head patterns of the various taxa, and in particular between Soft-plumaged and Zino's/Fea's Petrels. Head pattern was something that all of the British observers found very difficult to describe, and most descriptions contain no useful detail. Being able to use head pattern as an aid to field identification on birds seen from land seems unlikely at this point, unless the views are outstanding.

Underwing

Getting a good view of a predominantly dark underwing is of fundamental importance if a bird is to be placed in the 'soft-plumaged petrel' complex, but is of no (known) value when separating the three species from each other. Not many potential confusion species have a dark underwing, although observers should bear in mind that dark-morph ('blue') Fulmars and pale-morph skuas (which frequently tower without flapping when flying with the wind) could both provide genuine pitfalls for the unwary. The underwing really is extremely dark and was clearly a striking feature for all of the observers of the British records; and this is a

prerequisite for acceptance. The amount of detail beyond this is rather variable, and the way it is described varies enormously with light conditions. Those seen in brighter light, particularly where there is fairly strong light behind the observer, have shown more detail, ranging from a pale wedge on the leading edge of the underwing to a complex pattern of light and dark, dominated by dark. This is usually in the form of a broad dark bar running up the middle of the underwing, with a paler area along the leading edge, and a limited, slightly paler area on the bases of the primaries and outer secondaries.

Upperparts and upperwing pattern

This feature has shown the greatest variation among the descriptions. As for the underwing, the pattern seen appears to be highly dependent on the light. Approximately half of all submissions emphasise the rather uniform upperwing, the colour tones of which are described as grey-or, in some cases, slightly brown-toned. In most of these cases, a paler mantle and darker wings are noted but include little additional detail. The remainder of the descriptions mention a dark 'M' across the wings, this pattern being most obvious on birds seen in strong light from behind the observer or, paradoxically, in very dull light. This wing pattern is certainly a feature of Fea's and Soft-plumaged Petrels, but variation is evident when studying the range of published photographs, and may be related to prevailing light conditions. Quite whether Zino's Petrels show this pattern in the field is unknown but photographs in the hand suggest that they may do.

Discussion

None of the records discussed here can be assigned to species with complete confidence. However, now we know that Fea's Petrel does turn up in British waters, on the basis of the three records accepted so far, the context changes. It is important to reiterate that the purpose of this paper is not to assign each individual to species, but to establish whether there is any strong evidence suggesting that more than one form is likely to be involved.

Is there any evidence that Soft-plumaged Petrel occurs in British waters?

In terms of the three key characters discussed above, the uniformity of the descriptions

reviewed here is quite striking. No bird has ever been consistently reported as having a complete or even a partial breast-band by all observers (see above). Many observers commented on the startling whiteness of the entire underparts, usually in contrast to the dark underwings. Grey sides to the neck were not always reported; perhaps because observers were concentrating on other, more important, characters; perhaps because they were actually difficult to see; or perhaps they were simply not looked for. Views were not always particularly close, but some birds *were* close to shore, and in virtually every case it is perfectly reasonable to expect that if a breast-band was present, even one that was weak, poorly defined or incomplete, it would have been seen reasonably easily.

The validity of tail colour as a feature is also open to some interpretation. The contrast in colour between the body and tail, which is shown by both Fea's and Zino's Petrels, reported by many observers, may not always be obvious (Madge 1990; Harrop 2004), particularly in harsh light. In the case of Soft-plumaged Petrel, however, the contrast between the tail and body appears to be fairly minimal. If a bird shows a contrastingly paler tail, this should be a strongly supportive feature for Fea's or Zino's Petrel. Among the British records discussed here, the uniformity of descriptions of tail colour is quite striking. Only one description did not mention a significantly paler tail. Tail length and shape are much less reliable but still relevant features, and only two descriptions failed to comment on these; in one case probably because of the long

distance involved and in the other perhaps owing to poor light. Otherwise, all birds had long, pale and tapered or rounded tails, which would be expected with the two North Atlantic species.

Although Soft-plumaged Petrel can show a slightly paler tail and incomplete breast-band, the tail contrast is generally poorly marked, and there is usually a significant breast-band. In other words, while the identification criteria need to be interpreted with caution on any individual bird, there is a 'normal' pattern emerging. If any of the well-seen British birds were *not* typical of one of the two northern species, we might expect to see some discrepancies creeping in – for example, the tail contrast not being noted, even when the breast was thought to be clear, or vice versa. What we actually have is a series of descriptions, virtually all of which specifically mention both (i) clean white underparts and (ii) a long, tapered, pale grey tail. In the exceptional cases where these features are not described, there is usually a perfectly good reason why they have not been. On the basis of the records reviewed here, there is so little variation among the descriptions that Soft-plumaged Petrel can be effectively ruled out as a possibility. There is nothing to suggest that Soft-plumaged Petrel has been seen in British waters.

Is there any evidence that Zino's Petrel may occur in British waters?

This is a much more difficult proposition. In order to draw conclusions, it is worth first con-

Table 3. Summary of weights and biometrics of Fea's *Pterodroma feae* and Zino's Petrels *P. madeira*, with those of Manx Shearwater *Puffinus puffinus* for comparison.

Species	Weight (g)		Wing (mm)		Total body length (mm)	Wingspan (mm)
	Published range	Range of reported means	Published range	Range of reported means	Published range	Published range
Fea's Petrel	275–355	311	262–273	263–270	330–360	860–950
Zino's Petrel	175–231	204	247–259	247–254	320–333	800–860
Manx Shearwater	350–535	375–447	–	–	300–380	710–850

Measurements for weight and wing measurements come from original source material or reviews of source material. For Fea's and Zino's Petrels, these include Zino & Zino (1986), Bretagnolle (1995) and Monteiro & Furness (1995). Weight data for Manx Shearwater is taken from Cramp & Simmons (1977). Total body length for Fea's and Zino's Petrels comes from source material based on live birds (Zino & Zino 1986), while total length values for Manx Shearwater and all wingspan values are taken from Mullarney *et al.* (1999) and from Beaman & Madge (1998), and should be taken as estimated rather than precise measurements.

sidering the biometrics of the two forms, and comparing them with those of the most usual comparison species, Manx Shearwater (table 3).

Biometrics can be difficult to interpret and, ironically, it is easier to compare measurements for the two North Atlantic *Pterodroma* species, for which data are scarce, than to compare their biometrics with those of Manx Shearwater, where there exists a range of data from different sites and at different times of year. Furthermore, the different structure of shearwaters means that wing length is not particularly useful when comparing Manx Shearwater with Fea's and Zino's Petrels; 'wingspan' gives a better feel for these differences and this is included in table 3. Not being a standard biometric measurement, wingspan is likely to be approximate, but will still give a reasonable indication of relative sizes and is more useful in the context of field records. The published ranges for weight and wing are tabulated, as well as a range of reported means, as the published data do not allow more detailed statistical analysis. Nevertheless, what is presented should perhaps give enough of a picture to enable us to make some judgements about the British records.

The most striking differences are those in body weight, with Zino's being a lightly built species, and Fea's averaging more than 50% heavier. Comparison of wingspan suggests that Fea's is a particularly long-winged bird. Given the relative values, it is possible that Zino's may appear almost as big as Manx Shearwater and could perhaps give the impression of being fractionally longer-winged, but it seems inconceivable that Zino's would look bigger and substantially longer-winged if direct and accurate comparisons were possible. Conversely, Fea's would be expected to be similar in size to Manx Shearwater but with perceptibly longer wings.

Among those British records where direct comparison (with Manx Shearwater) was possible, all birds were described as similar to Manx in size, or fractionally larger and with perceptibly longer wings. Of the remaining descriptions, all stressed the similarity in size to Manx or felt that birds were slightly larger, but clearly less emphasis should be placed on these. Only two descriptions suggested that the bird may have been smaller or shorter-winged than Manx Shearwater. One commented on the overall bulk being greater than Manx, despite stating

that the wings were 'proportionately shorter' but, in this case, the descriptions of the same bird from other observers emphasised the longer wings. The other observation was from a boat and there were no comparison species present. In the last case, the difficult circumstances of the observation mean that it would be unwise to place too much emphasis on the size assessment.

There are suggested differences in the wing formula of the two species, with Zino's possibly having a rather blunter wing-tip than Fea's. This is surely an unreliable field character on an individual bird, but it is worth noting that in 15 of the records discussed here the 'pointedness' of the wing-tips is highlighted as a feature. There are some minor discrepancies but, again, the circumstances of the observations and descriptions from other observers can generally account for these.

Unless the bird is seen exceptionally well, the bill can be a particularly difficult feature to see well on a passing bird, and still more difficult to be confident about. Seven descriptions describe the bill sufficiently well to merit comment. All use terms such as 'large', 'stubby' or 'hefty', suggesting a rather robust or thick bill in the cases where it was reported. There is no clear evidence to suggest that smaller-billed birds were seen, as in the other cases the bill was not seen well enough for comment. Of course, an alternative explanation is that they were just not large enough to catch the eye. It takes only a quick glance at the plates in Harrop (2004) to see how unreliable this feature is likely to be in the field without a photograph.

Conclusions

Although it has proved impossible to assign any of these individuals to one particular species with complete confidence, the weight of evidence suggests that the well-observed British records of 'soft-plumaged petrels' refer to Fea's Petrel. There is no evidence at all of birds showing features suggestive of Soft-plumaged Petrel in British waters. Although it is a much more difficult problem, there is also nothing specific to suggest that Zino's Petrel has occurred either. Even where there are minor anomalies relating to one feature in a description, these are either contradicted by another observer's description, or occur where there are other features strongly suggesting Fea's Petrel. Although it is quite possible that

either or both of the other species may occur, there is nothing specific to suggest that any of the British records so far might relate to one of them. This is quite different from saying that any of the earlier records are acceptable as the first Fea's Petrel for Britain; this requires a higher level of proof that is simply not available.

Until such time as there is clearly documented evidence of individual records, or a number of observations of birds displaying features that contradict the established characters, it is probably reasonable for most observers to assume that a 'soft-plumaged petrel' seen around Britain's coast is likely to be Fea's Petrel. This is not only because Zino's Petrels are so rare, but also because the weight of documented evidence, where it exists, is consistent with our current knowledge of Fea's Petrel, the one species which has been proved to occur.

We are left with the dilemma of how to record these sightings statistically, both in the future and for the past. This situation is unique in British terms: only one species has been proved to occur and, of the other two, one inhabits the southern hemisphere and the other is one of the world's rarest birds. There are examples of species pairs where there is a similar problem. For example, consider Grey-cheeked Thrush *Catharus minimus*, which has occurred in Britain on a number of occasions, and Bicknell's Thrush *C. bicknelli*, which remains a potential vagrant and is extremely difficult to identify confidently in the field (and the current taxonomic status of which is still a matter for debate). BBRC has never considered records of Grey-cheeked Thrush as possibly Bicknell's, and since Bicknell's has not yet been shown to occur BBRC will continue to accept all records as apparent Grey-cheeked Thrushes. In an attempt to achieve consistency, the 'soft-plumaged petrels' perhaps need to be addressed in a similar way.

A policy of 'Fea's until proven otherwise' may appear to lack complete scientific rigour, but on the other hand, it is closer to BBRC's statement of purpose (to maintain a statistically valid database of records of rare birds). BBRC will need to come to a decision as to how we should record the previous and subsequent records. Debate would be welcome; but meanwhile, if you do see a 'soft-plumaged petrel', please enjoy it!

Acknowledgments

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Appendix 1. Dates and locations of all 'soft-plumaged petrels' *Pterodroma mallis/madeira/fea* recorded from British waters and accepted by BBRC up to and including 2004, including the three records accepted as Fea's Petrel *Pterodroma fea*.

Location	Date	Accepted as	Reference
Sea area Sole, 16 km W of St Mary's (Scilly)	6th September 2004	Fea's Petrel	Rogers <i>et al.</i> 2005
Sea area Sole, 16 km W of St Mary's (Scilly)	28th August 2004	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2005
Flamborough (East Yorkshire)	24th October 2003	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2004
Flamborough (East Yorkshire), Whitburn (Co. Durham) and Farne Islands (Northumberland)	23rd September 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
North Ronaldsay (Orkney)	21st September 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Sea area Sole, 10 km S of St Mary's (Scilly)	8th September 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Flamborough (East Yorkshire) & Whitburn (Co. Durham)	1st September 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Flamborough & Filey (East Yorkshire)	26th August 2002	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2004
Flamborough (East Yorkshire)	23rd September 2001	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Sea area Sole, 96 km SW of St Mary's (Scilly)	12th August 2001	Fea's Petrel	Rogers <i>et al.</i> 2005
Walney Island (Cumbria)	22nd July 2001	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Hope's Nose & Berry Head (Devon)	17th July 2001	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2003
Sea area Sole, 12 km S of St Mary's (Scilly)	8th July 2001	Fea's Petrel	Rogers <i>et al.</i> 2005
St Mary's Island & Farne Islands (Northumberland)	19th November 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2001
5 km S of St Agnes (Scilly)	31st August 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2001
Porthgwarra (Cornwall)	26th August 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2000
1.5 km S of Bishop Rock (Scilly)	24th August 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2002
Prawle Point (Devon)	17th August 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2000
Flamborough (East Yorkshire)	12th June 1999	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2002
Newbiggin-by-the-Sea (Northumberland)	24th August 1998	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1999
Blakeney Point, Cley, Sheringham & Mundesley (Norfolk)	26th June 1997	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1998
Strumble Head (Pembrokeshire)	4th October 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Farne Islands (Northumberland)	20th September 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Newbiggin (Northumberland)	13th September 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
3.2 km SW of Bishop Rock (Scilly)	18th August 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1998
Sea area Fair Isle	25th June 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Gwennap Head (Cornwall)	11th June 1996	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1998
Formby Point (Lancashire)	8th September 1995	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Bardsey (Gwynedd)	10th September 1994	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1996
Hauxley & Farne Islands (Northumberland)	5th September 1993	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1997
Flamborough (East Yorkshire) Two birds	6th September 1991	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1995
Porthgwarra (Cornwall)	12th–14th August 1989	Zino's/Fea's Petrel	Rogers <i>et al.</i> 1992
Dungeness (Kent)	15th October 1983	Zino's/Fea's Petrel	Rogers <i>et al.</i> 2004

Appendix 2. Dates and locations of all 'soft-plumaged petrels' *Pterodroma mollis/madeira/feae* recorded from Irish waters and accepted by IBRC.

Location	Date	Accepted as	Reference
Galley Head (Co. Cork)	19th July 2003	Zino's/Fea's Petrel	<i>Irish Birds</i> (in press)
Cape Clear Island (Co. Cork)	11th September 2002	Zino's/Fea's Petrel	<i>Irish Birds</i> 7: 390
Melmore Head (Co. Donegal)	29th August 2002	Zino's/Fea's Petrel	<i>Irish Birds</i> 7: 390
Old Head of Kinsale (Co. Cork)	23rd September 2000	Zino's/Fea's Petrel	<i>Irish Birds</i> 7: 82
56 km northwest of Arranmore, at sea	18th August 2000	Zino's/Fea's Petrel	<i>Irish Birds</i> 7: 220
Bridges of Ross (Co. Clare)	30th August 1999	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 546
Greenore Point (Co. Wexford)	23rd August 1999	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 546
Cape Clear Island (Co. Cork)	18th August 1999	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 546
Cape Clear Island (Co. Cork)	8th September 1998	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Helvick Head (Co. Waterford)	6th September 1998	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Cape Clear Island (Co. Cork)	24th August 1997	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 288
Bridges of Ross (Co. Clare)	31st July 1997	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 288
Cape Clear Island (Co. Cork)	22nd August 1996	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 65
St John's Point (Co. Down)	22nd August 1996	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 65
Galley Head (Co. Cork)	27th July 1996	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Brandon Point and Kerry Head (Co. Kerry)	26th August 1995	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 499 & 6: 65
Bridges of Ross (Co. Clare)	25th August 1995	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 449
Cape Clear Island (Co. Cork)	27th July 1995	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 449
Mizen Head (Co. Cork) Two birds	24th August 1994	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 328
Cape Clear Island (Co. Cork)	11th August 1993	Zino's/Fea's Petrel	<i>Irish Birds</i> 5: 328
Galley Head (Co. Cork)	1st October 1992	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Galley Head (Co. Cork)	21st August 1992	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Old Head of Kinsale (Co. Cork)	4th August 1992	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
Galley Head (Co. Cork)	17th September 1991	Zino's/Fea's Petrel	<i>Irish Birds</i> 6: 380
St John's Point (Co. Down)	20th August 1991	Zino's/Fea's Petrel	<i>Irish Birds</i> 4: 574
Cape Clear Island (Co. Cork)	26th August 1990	Zino's/Fea's Petrel	<i>Irish Birds</i> 4: 574
Old Head of Kinsale (Co. Cork)	14th August 1989	Zino's/Fea's Petrel	<i>Irish Birds</i> 4: 575 & 6: 65
Cape Clear Island (Co. Cork)	5th September 1974	Zino's/Fea's Petrel	<i>Irish Bird Report</i> 23: 6 & <i>Irish Birds</i> 6: 65

Looking back

Seventy-five years ago:

'FULMARS IN PEMBROKESHIRE. ON May 6th, 1930, Mr. C. Oldham and I saw a Fulmar (*Fulmarus g. glacialis*) flying past Strumble Head. This, I believe, was the first summer record of this species in Pembrokehire or indeed in South Wales (*Brit. Birds* 24: 196).

'In mid-May, 1931, Mr. F. Twells of Flimston noticed and drew attention to two strange birds haunting the cliffs among the numerous Gulls and Auks there. On June 6th I watched a single Fulmar flying along the cliff-face at Stackpole Head about 5 miles distant from Flimston; and on June 7th I identified the Flimston birds. Then, and during the ensuing three days, we saw eight Fulmars on the ledges there, close together and apparently quite at home. One pair

at least was indulging in "courtship" behaviour, though I detected no signs of nesting.

'These cliffs, it may be mentioned, lie considerably to the south-east of the Saltee Islands, where Fulmars were recorded nesting in 1930. BERTRAM LLOYD.' (*Brit. Birds* 25: 81–82, August 1931)

'FULMAR PETRELS IN LANCASHIRE AND NORFOLK.— Mr. H. W. Robinson informs us that a specimen of *Fulmarus g. glacialis* was caught alive on Walney Island at the end of August, 1929, this being the eighth record for the county.

'Mr. E. L. King writes that on May 24th, 1931, one was found dead in a fresh state on Horsey Beach by some members of the London Natural History Society.' (*Brit. Birds* 25: 83, August 1931)

An unlikely survivor: the peculiar natural history of the Raso Lark

Paul F. Donald and M. de L. Brooke

ABSTRACT The Raso Lark *Alauda razae* is one of the rarest and most threatened birds in the world. Until recently, almost nothing was known of its population, behaviour or ecology. Recent research has shown that the species exhibits a number of fascinating behavioural and ecological peculiarities. The tiny population, currently fewer than 150 individuals, is dominated by males, which outnumber females by two to one. The males differ from the females in bill structure and feeding behaviour, possibly representing an adaptation to reduce competition between the sexes in a hostile environment. The species' population is correlated with rainfall, and numbers in the past must have fallen to extremely low levels, possibly even into single figures, during periodic long droughts. Nesting success is very low, owing to heavy predation of eggs by the near-endemic Cape Verde Giant Gecko *Tarentola gigas*, itself a threatened species. Despite this, and a growing number of other threats, the species still manages to maintain a precarious toehold on its tiny, drought-prone islet home, thanks largely to the continued absence of the introduced mammalian predators that infest neighbouring islands. Recent tourist developments on neighbouring islands, leading to greater visitor numbers, and a predicted increase in drought through climate change pose new and increasing threats. Urgent measures are required to secure the long-term survival of this remarkable and unlikely survivor.

On 28th April 1897, the young English naturalist and explorer Boyd Alexander (1873–1910) scrambled up the low cliffs that fringe the southern rim of the tiny, waterless and uninhabited island of Raso, one of the smallest of the Cape Verde Islands. Off-shore, his ship, 'a fine old American pilot-boat of nearly eighty tons', was forced by the absence of a safe anchorage to beat backwards and forwards, waiting for him and his companions. Alexander had previously visited several of the other islands in this (at the time) Portuguese colony, and can hardly have expected to make his greatest discovery on one of the smallest and least hospitable of the group. After emerging onto the flat, low plain that makes up Raso's

southern half, however, he soon realised that the island was inhabited not only by abundant seabirds, but also by an unfamiliar lark, which he described as 'so tame that we could have knocked many over with sticks' (Alexander 1898 a,b). He compensated for the absence of sticks on this treeless island by shooting a good number of them instead, and 29 of these specimens still reside in the skin collections of the British Museum of Natural History in Tring and the American Museum of Natural History in New York. Alexander named his discovery *Spizocorys razae*, without explaining why he assigned it to a genus represented at that time by a single southern African species. After spending taxonomic time in the monotypic

(and now defunct) *Razocorys*, and then in *Calandrella*, the Raso Lark was finally recognised by Hall (1963) to be closest to the skylarks *Alauda*, a position recently confirmed by DNA analysis (Keith Barnes pers. comm.) and supported by detailed behavioural observations (Donald *et al.* 2003). The main structural differences between Raso Lark and Sky Lark *Alauda arvensis* (smaller size, less pointed wing and longer, heavier bill of the former) may all result from adaptations to life on a small, arid island (Hall 1963; Burton 1971; Hazevoet 1995), and the two species are closely related.

A year after Alexander's discovery, the Italian naturalist Leonardo Fea (1852–1903) visited Raso and collected a further 30 specimens, now in the Museo Civico di Storia Naturale, Genova. (Fea was also, incidentally, perhaps the last naturalist to observe alive the remarkable Cape Verde Giant Skink *Macroscincus coctei*, once endemic to Raso and nearby Branco and probably hunted to extinction around a century ago.) The lark was then left in peace until 1922, when José Correia (1881–1954), an Azorean naturalist, collected specimens for the American Museum of Natural History in New York. Two years later, 16 further specimens were collected during an expedition in the sailing ship *Blossom* by the Cleveland Museum of Natural History, Ohio, some of which are also in the New York

collection. After another long absence from the attention of ornithologists, the Raso Lark briefly reappeared in the writings of Meinelertzhagen (1951) and Bourne (1955), before the Abbé de Naurois embarked upon a series of visits to the island in the 1960s. David and Mary Bannerman, authors of the first book on Cape Verde's birds (Bannerman & Bannerman 1968), preferred to view Raso from the comfort of a passing ship and did not land, instead extolling the bravery and hardiness of de Naurois and others in landing and staying on the island. Further specimens were collected until at least 1970 (eight specimens of this date reside in Lisbon Museum), but little was recorded of the species' numbers, ecology or behaviour until the late 1980s, and the standard account given in *BWP* is based largely on early and sketchy accounts.

Distribution, population and sex ratio

Cape Verde is the southernmost of a number of northeastern Atlantic island groups known collectively as Macaronesia, which also contains the rather better known (at least ornithologically) Canary Islands, Azores and Madeira. It is the only politically independent member of this group, having ceded from Portugal in 1975. The archipelago lies in the northeast trade-wind belt, at about 15°N and approximately 500 km west of



Paul Donald

207. Raso in October 2001. Recent rainfall resulted in a growth of green cover and most birds were nesting. The sandy areas in the foreground contained large numbers of holes, excavated mainly by male Raso Larks *Alauda razae* to extract small bulbs from below the surface.

Senegal, and consists of nine inhabited islands and a number of smaller islets, the island group having a total land area of 4,033 km², scattered over approximately 60,000 km² of ocean. Raso lies in the northern group of islands, the so-called 'Windward Islands' (*Ilheus do Barlavento*), and is one of three uninhabited islands (the other two are Branco and Santa Luzia) that lie between São Nicolau and São Vicente.

Where did the Raso Lark, so closely related to the Sky Lark yet separated from the nearest population of that species by more than 2,000 km of sea and desert, come from? There are at least two possible explanations. The first is that this population represents the last remnant of a species that was formerly far more extensive across Africa, perhaps a western counterpart of the Oriental Lark *A. gulgula*, which replaces the Sky Lark in southern Asia today. This may have become extinct on the mainland as climatic conditions changed, but persisted in Cape Verde. Alternatively, the species may have evolved *in situ* on Cape Verde following colonisation by Sky Larks (or their ancestors) during one of the Ice Ages, when the Palearctic fauna was pushed southwards into what is now the Sahara. As the ice retreated and the Sahara reverted to desert, the Sky Larks gradually returned northwards, leaving some stragglers stranded behind on Cape Verde to evolve into the species that survives there today. The

equally isolated Warsangli Linnet *Carduelis johannis* may owe its existence on the opposite side of the African continent to a similar process of postglacial stranding in a habitat with few competitors. It is perhaps no wonder that, despite noting several similarities to the Sky Lark (including its call), Boyd Alexander did not consider the possibility of his new bird being closely related to that familiar but geographically distant species.

Given these alternative scenarios, the time of arrival of the Raso Lark's ancestors in Cape Verde is unclear. In conformity with the idea of late Pleistocene speciation, Hazevoet (1995) and others have suggested that the species' arrival is likely to have been recent, within the last 100,000 years. Ongoing genetic studies, however, indicate a difference between Sky Lark and Raso Lark in the mitochondrial cytochrome-*b* gene of around 7.2%. A conventional estimate is that avian cytochrome-*b* DNA diverges by approximately 2% per million years. Although the application of this standard has been severely criticised, a 7.2% divergence between Sky Lark and Raso Lark strongly suggests a divergence at least 2–3 million years ago, rather than during the glacial and interglacial cycles of the late Pleistocene in the last few hundred thousand years (Keith Barnes pers. comm.). This new evidence suggests that either the Raso Lark and its ancestors must have survived on Cape Verde for far longer than originally thought, or the Raso Lark began its separation from the Sky Lark elsewhere before colonising the Cape Verde Islands.

There is no written or confirmed physical evidence of the species from any of the other Cape Verde islands, but unless it is an extremely recent arrival (within the last 20,000 years, which now seems highly unlikely), its ancestors would have been present when Raso was intermittently connected through low sea levels to the neighbouring islands of Branco (3 km²), Santa Luzia (35 km²) and São Vicente (227 km²). It is therefore



208. Raso Lark *Alauda razae*, Raso, Cape Verde, December 2002.

likely to have had a far larger distribution than it has today, as the resulting island (which would of course have included all the submerged areas now separating the present islands) may have extended to several thousand square kilometres. Populations may have persisted on several islands after rising sea levels separated them, perhaps until the islands' discovery and occupation by Portuguese settlers (and their accompanying cats, dogs, rats and goats) from 1462 onwards. There is certainly plenty of apparently suitable habitat on the larger (but cat-infested) Santa Luzia, and claims that sub-fossil bones found on São Vicente may be of Raso Lark are intriguing (Donald *et al.* 2005). It may be no coincidence that the Raso Lark survives on the largest island in Cape Verde that has never been permanently inhabited by people.

Raso is divided fairly equally into two landscape types. The first comprises a low, flat plain of decomposing lava and tufa, intersected by small, dry *ribeiras* (stream beds, where water flows only infrequently), with a scant cover of grasses and herbs. It is here that the majority of Raso Larks subsist, although birds are not spread evenly across it. The highest densities occur along the tops of the low cliffs in the southwest of the island and along the *ribeiras*. Within these restricted areas, densities of birds are actually rather high for a lark, members of the *Alaudidae* tending to occur in low densities relative to other songbirds (Donald 2004), and the species appears generally more gregarious throughout the year than other *Alauda* larks. The other half of the island comprises hilly outcrops rising to 164 m, valleys and raised plains, and much is almost devoid of vegetation. Very

few birds are found here during the breeding season, but up to half the population moves here when the birds are not breeding. At such times, all the birds present in this part of the island form a single tight flock, and are more wary and less approachable than those elsewhere on the island, possibly because of the presence of 'Neglected Kestrels' *Falco (tinunculus) neglectus* in the area. The remaining birds are scattered in pairs or small groups around the lava plain, with a large concentration in the southwest of the island. Less than half of Raso's 7-km² area is regularly used by the larks, and the species has one of the smallest



209. Raso Lark *Alauda razae* (left) and Sky Lark *A. arvensis* (right). Although the Raso Lark is only around two-thirds the size of a Sky Lark, the bill is considerably larger, representing an adaptation to life on an arid island.



210. Male (left) and female (right) Raso Lark *Alauda razae*. Males have significantly larger bills than females, and obtain significantly more of their food by digging than the smaller females, which instead feed mostly by picking seeds and invertebrates from the surface and from under stones. The difference in feeding methods between the sexes may contribute to the species' unbalanced sex ratio.

Paul Donald © Natural History Museum, Tring

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ranges of any bird in the world.

There is little historical information on population size. Bourne (1955), writing of a visit in 1951, said that the birds 'swarm' upon the island and are 'totally fearless'. When the Abbé de Naurois first visited Raso in 1962, he is said to have found 'an abundance of adults and immatures awaiting him' (Bannerman & Bannerman 1968). On subsequent visits, however, the same naturalist noticed decreasing numbers, recording only approximately 50 pairs in 1965. By the early 1980s, the population appears to have fallen to as few as 10 pairs, though these estimates were not based on systematic surveys. The first systematic count of the species did not occur until 1986, when Hazevoet (1989) estimated the population at 75–100 pairs. The population had clearly declined by 1996, when Bakker & van Dijk (1996), in a two-day visit, found the species 'surprisingly hard to find' but eventually managed to see around 30 birds. Other population estimates are presented in Ratcliffe *et al.* (1999) and Donald *et al.* (2003, 2005). In October 2001, the population stood at around 130 individuals. By November 2003, this had fallen to between 76 and 87 individuals, and in December 2004 only around 65 birds were present. However, following good rainfall in 2005, the population increased sharply and in December 2005, it stood at around 130 individuals. From these counts, it is clear that popu-

lations fluctuate greatly and their size is dictated largely by rainfall, which is a prerequisite for breeding. Catastrophic droughts lasting up to 18 years have occurred throughout Cape Verde's recorded history (as recently as the 1940s, tens of thousands of Cape Verdeans died in a drought-induced famine). After rain, the Raso Lark population increases; after droughts it can fall to extremely low levels. This pattern is apparent even from the few existing population estimates, and there is a strong positive correlation between population size and rainfall (Donald *et al.* 2003). In the early 1980s, following a drought of more than a decade, populations were extremely low. Whether any long-term trend underlies these greatly fluctuating population estimates is unclear, but there are reasons to suspect that there has been a long-term decline in the population. Rainfall patterns in the Sahel (fig. 1), which are likely to be a reasonable indicator of rainfall on Cape Verde (T. Spencer pers. comm.), show that at the time of Bourne's 'swarm' in the early 1950s, and of de Naurois' 'abundance' in the early 1960s, rainfall in the Sahel was well above average. Since 1970, however, annual rainfall in the Sahel has generally been below the long-term average, and populations may be lower on average as a result.

Whether or not there has been any long-term population decline, the Raso Lark is



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211. Nest of Raso Lark *Alauda razae* (centre, under overhanging vegetation), Raso, Cape Verde, December 2004.

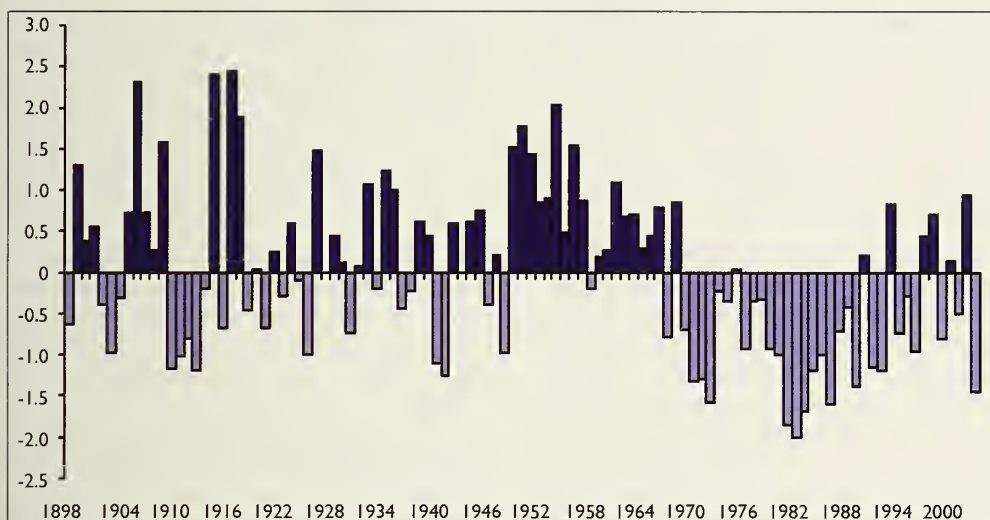


Fig. 1. Standardised Sahel rainfall index (average of June to October, the main rainfall season), 1898 to 2004. Dark blue bars indicate years with rainfall above the long-term average, light blue bars years with below-average rainfall. Between 1970 and 2004, only seven years had rainfall that was at or above the long-term average. This drying trend, at least partly the result of increased greenhouse gases, is expected to worsen in the future (Held *et al.* 2005) and poses a severe threat to the Raso Lark *Alauda razae*. Rainfall data reproduced courtesy of the Joint Institute for the Study of Atmosphere and Ocean (JISAO), University of Washington.

steering a course perilously close to extinction. Species with greatly fluctuating populations are more at risk of extinction than species with stable populations, simply because there is a higher risk of chance events reducing the population to zero. When the population is as small as that of the Raso Lark, extinction becomes a real possibility. That the species has managed to survive for so long suggests remarkable endurance, but it must have flirted with extinction many times during its history, as the extremely low counts from the 1980s suggest.

If the sex ratio among the 80 or so birds present in 2003 were one male to one female, the population would equate to around 40 pairs. Most birds are assumed to have a sex ratio that approximates to equality: females and males occur in equal numbers. However, finding an unbiased way to determine this in the field is extremely difficult. Males and females may occupy different areas or habitats, may show a different propensity to enter traps or nets and may be more or less conspicuous at different times of year, all making precise estimation of sex ratios in wild bird populations extremely difficult. In the case of the Raso Lark, however, estimation of the sex ratio is relatively straightforward: most of the world population can be seen within a single day, the species is tame, and males and females are usually easy to distinguish in the field. Counts undertaken in

2001 suggested, unexpectedly, that the sex ratio was actually far from balanced, and that males greatly outnumbered females (Donald *et al.* 2003). This was confirmed from biometrics of birds caught for ringing in 2002 and 2003 (Donald *et al.* 2005): males outnumbered females by around two to one. This means that the total reproductive population is considerably lower than the actual population. The reasons for this skewed sex ratio are unknown, but may be related to differences between the sexes in morphology and feeding, discussed later. Such an unbalanced sex ratio clearly increases the likelihood of extinction, since natural fluctuations need only to reduce the tiny number of females to zero for the species to become functionally extinct. The males' songs might echo over Raso for several years after the species becomes consigned to history through the death of the last female.

Breeding ecology and display

The song, described in detail (with sonograms) by Hazevoet (1989), bears some structural similarities to that of the Sky Lark. During protracted song flights, the song of the Raso Lark is more broken, slower and less complex than that of the Sky Lark, consisting of short bursts of four to six notes, little more than a repetition of the call, interspersed with gaps. In all these respects, it resembles more closely the song of

the Short-toed Lark *Calandrella brachydactyla*. However, the Raso Lark reveals its true ancestry during the rapid descent at the end of the song flight, when the song changes briefly to resemble very closely the frenetic character of Sky Lark song. Song flights, given only by the males, last an average of just over two minutes, rather shorter than those of the Sky Lark, though unpaired males give significantly longer song flights (up to a recorded maximum of 13 minutes) than paired birds (Donald *et al.* 2003). Singing birds face into the prevailing northeast trade wind and, in comparison with Sky Larks, birds do not usually ascend as high during their song flights. On windless days and on days with strong winds, aerial song ceases and is replaced by ground song, which appears more frequent than in the Sky Lark. As with Sky Larks, aerial song flights are recorded in small numbers outside the breeding season. Paired males spend much of their time guarding their mates, while unpaired males spend much of their time singing and defending territories from other unpaired males. One unpaired male in 2001 appeared to be defending two territories around 500 m apart. Prior to copulation, males perform hopping and bowing displays similar to those of the Sky Lark (Donald 2004).

Until recently, almost nothing was known about the breeding ecology of the Raso Lark. Breeding appears largely confined to periods

following irregular falls of rain, usually from August to April. Mass breeding events are probably less than annual, but it may be that some pairs are capable of breeding during any year, as suggested by the presence of a recently fledged juvenile in January 2003, following a long period with no appreciable rainfall. Indeed, it is hard to imagine how the species could survive a drought of over a decade without some reproductive input to the population. In October 2001 and again in November 2003, expeditions to Raso to study the species fortuitously followed rainfall, and we now have data from over 60 nests.

The nest has been described and photographed by previous authors (Hazevoet 1989; Castell 1999) and closely resembles that of the Sky Lark in structure and materials, although it is generally more hidden under vegetation. Most nests found to date have been built on the ground under the mallow *Abutilon pannosum* (most frequent in 2003) or under the Simple-leaved Bean-caper *Zygophyllum simplex* (most frequent in 2001), or occasionally in clumps of grass (Poaceae). De Naurois (in Bannerman & Bannerman 1968) recorded a number of nests built 10 cm or even 20 cm above the ground in a 'thick, low shrub'. Although he attributed these to the lark, it seems more likely they belonged to the Cape Verde Sparrow *Passer iagoensis*. Clutch size varies between one and



212. Holes which Raso Larks *Alauda razae* have dug for food, Raso, Cape Verde, November 2003.

three eggs (mean = 2.1), significantly fewer than that recorded for the Sky Lark in any part of its range (Donald 2004). The low clutch size of Raso Lark seems to fit the tendency noted by Bourne (1955) for many species in the Cape Verde Islands to have smaller clutches than their mainland congeners. The eggs of Raso Lark are said by those familiar with both to closely resemble those of the Wood Lark *Lullula arborea*, but are also very similar to, though noticeably smaller than, those of the Sky Lark. As with most other larks, incubation is undertaken entirely by the female (contrary to the account in *BWP*), and appears to last 12–13 days, a day or two longer than that of the Sky Lark (Donald 2004) despite the smaller clutch size. The female incubates in periods of around ten minutes, followed by feeding breaks of around the same length, during which the male often accompanies her. Although data are scant, it appears that the young may remain in the nest for up to 15 days after hatching, again considerably longer than for the Sky Lark.

It is during the incubation period that an extraordinarily high proportion of nests fail through predation. In October 2001 and again in November 2003, almost all nests were predated; in 2001, the overall survival rate of eggs from laying to hatching was estimated at just 5%. Because so many of the nests have been predated by the time of hatching, the survival rates of chicks cannot be quantified, though we have observed one case of chick predation in the nest. Almost all predated nests showed the same pattern of an undisturbed nest lining with large fragments of eggshells left in the nest, suggesting that a single predator was responsible. This is almost certain to be the nocturnal Cape Verde Giant Gecko *Tarentola gigas*, itself a threatened species, restricted to Raso and the smaller Branco (Donald *et al.* 2003). This species is widely distributed on Raso but appears to show an affinity for seabird burrows, where it may spend the day and gather much of its food (Hazevoet 1995). Raso Larks, like Sky Larks, compensate in part for high nest losses by rapid re-laying after nest failure. One pair was even observed building a new nest the day following the loss of their previous nest. It is clear, however, that with irregular breeding and high nest predation, productivity is very low; consequently, given the species' continued existence, it seems that adults must be relatively long-lived. Ongoing studies of ringed birds will

quantify this, but already there are indications that survival is indeed very high for a small bird living in such an austere environment.

Feeding

The Raso Lark depends for its existence on the ability to find sufficient food on its arid island home. Raso is small, has little vegetation and suffers periodic droughts, and it seems extraordinary that birds can find enough food to survive. That they do persist suggests a high degree of adaptation, and an ability to exploit a range of different foods; it is only now that the remarkable range of adaptations shown by this species to life on a desert island is becoming apparent.

One of the most striking differences between the Raso Lark and its congeners is the structure of its bill. Although only around two-thirds the size of a Sky Lark, the male Raso Lark has a considerably longer and heavier bill. The bill of the female is slightly larger than that of the Sky Lark, but significantly smaller than that of the male. Indeed, unlike the Sky Lark, there is no overlap in bill length of male and female Raso Larks. The likely explanation for the longer bill of the Raso Lark is that this represents an adaptation to survival in a sandy habitat. Many desert-dwelling larks have long bills for digging to uncover food buried in sand; an extreme example of this adaptation is shown by the Hoopoe Lark *Alaemon alaudipes* of North Africa and the Middle East. The significant difference in bill length between male and female Raso Larks is more difficult to explain, but recent observations of feeding behaviour may provide a clue. Several early visitors to Raso reported seeing holes in the ground which they variously assumed to be collapsed seabird burrows or lark nesting holes. In fact, these are feeding holes, which are mined almost exclusively by males to extract the bulbs of nutsedges, probably the most important being *Cyperus bulbosus* or *C. cadamosti*. In areas where these plants occur, the ground may be littered with old and active holes. Individual holes may have a productive life of several days, and be worked by a number of different birds. Digging is done with the bill, and the longer bill of male Raso Larks might explain why males spend more of their time, and extract more of their food, by digging in this way. The females dig less frequently and obtain most of their food by picking seeds and invertebrates from

the surface and from under stones. The difference in bill structure between male and female Raso Larks may therefore represent an adaptation that reduces competition for food between the sexes in a hostile environment with few resources. Each bulb takes an average of three minutes of hard digging to find and extract, and clearly represents a valuable food item. Some dominant males defend a number of feeding burrows from other birds in productive areas, and others keep watch and move in to start digging when the 'owner' is occupied in chasing off another bird. Others watch digging birds (particularly the smaller females) and kleptoparasitise them when a bulb is uncovered. A wide range of tactics is therefore employed to try to maximise bulb intake.

The rate of bulb intake by females is lower, and the total time spent feeding higher, than that of the males, and females spend less time preening and in vigilance behaviour (Donald *et al.* unpubl. data). This suggests that females might be under more pressure to find food than the males. If this is the case, it might explain the male-biased sex ratio, as females may be more susceptible to starvation. Intensive, long-term research by Peter and Rosemary Grant on Darwin's finches *Geospiza* in the Galapagos has demonstrated that differences in bill length as small as 0.5 mm can have a profound impact on survival rates, particularly during extreme climatic events (see Weiner 1995 for a popular account of this work). After one particularly severe drought, most of the smaller-billed birds in the Grants' study population died. Although we do not yet know enough about the Raso Lark to make direct comparisons, it is possible that the male-dominated population arises after prolonged drought through the higher mortality of the smaller-billed females, perhaps because of their lower intake of *Cyperus* bulbs. Intriguingly, there is no evidence of an uneven sex ratio in the specimens collected by Alexander and others at the end of the nineteenth century, a period of average or above-average Sahel rainfall. A study of colour-ringed birds is underway to determine whether females do indeed have a lower survival rate than males, and long-term monitoring may assess whether the sex ratio changes in the females' favour as rainfall increases. The Raso Lark clearly has much to contribute to the study of island biogeography.

Bulbs are not the sole source of food for Raso Larks. An analysis of faecal samples col-

lected from the song perches of males showed the presence in the diet not only of vegetable matter (present in all samples) but also of Lepidoptera larvae, beetle (Coleoptera) larvae, snails (probably marine gastropods), and a number of other invertebrate groups (Donald *et al.* 2003). Although data are lacking, it seems likely that chicks in the nest are fed largely on invertebrates, and perhaps the availability of invertebrates limits breeding to periods immediately following rainfall.

There is no standing fresh water on Raso, so the lark must meet its water requirements through its food. Birds are often seen breaking off and chewing parts of the succulent plant *Zygophyllum simplex*, possibly to extract water. On a small number of occasions, we have seen larks fly down to the wave platform and apparently drink seawater from the surface of rock pools. The importance of this behaviour is unclear.

Conservation

The Raso Lark is classified by IUCN as Critically Endangered (following recommendations by Ratcliffe *et al.* 1999 to upgrade its status from Endangered), placing it in a group of around 200 bird species around the world considered most likely to suffer global extinction in the near future. The Raso Lark has one of the smallest ranges and populations of any bird. Population trends are poorly known, but it is clear that, particularly during the long periods of drought that have historically blighted the whole Cape Verde archipelago, numbers have dropped to extremely low levels, perhaps even into single figures. There is little evidence to suggest that the current population is on average lower than it has been in the past, but a number of potential threats exist, some of which are growing. Historical records, conversations with visiting fishermen from neighbouring islands and the finding of desiccated scats indicate that cats and at least one dog have been present on Raso in the recent past, though populations have apparently not established and no mammals are thought to be present on the island at the time of writing. Raso Lark remains have not been found in the cat and dog droppings examined (these contained almost nothing but seabird remains). At least one Short-eared Owl *Asio flammeus*, a rare visitor to Cape Verde, has been present on the island in recent years, though again examination of

pellets collected does not indicate the presence of Raso Larks in its diet (they also contained the bones of mostly seabirds). Neglected Kestrel and Brown-necked Raven *Corvus ruficollis* both breed in small numbers (one to three pairs of each) on Raso but have probably done so for many years, and these species hunt infrequently over the areas occupied by the larks. At present, therefore, there is no suggestion that predators other than the gecko are impacting on the Raso Lark population. Nevertheless, growing numbers of visits to the island, likely to rise further as tourist developments on neighbouring islands are completed, increase the likelihood of predators becoming established. It is also possible that non-native plant species will be introduced, with an unpredictable outcome.

The one predator that does impact on the lark is the Cape Verde Giant Gecko, which may have been present on the island for longer than the lark (Carranza *et al.* 2000), and certainly since well before human colonisation of the neighbouring islands. How the lark survives the massive predation of its nests by the gecko is unclear, yet clearly the two species have been capable of surviving together in the past. However, if human influence has increased the population of the gecko, for example by the provision of food in the form of scraps left by visitors, it could be that nest survival drops below the level needed to sustain the lark's population. The future survival of the lark and the gecko are clearly linked, and changes in the populations of one could influence those of the other. While we now know enough about the lark to begin to understand its ecology, we know next to nothing about the gecko, and this is an area of research that must be tackled if we are to understand fully the Raso Lark's ecology.

Increases in drought length and frequency represent a clear threat, and rainfall since 1970 has generally been below the long-term average (fig. 1, p. 425). How predicted anthropogenic climate change will affect rainfall patterns in Cape Verde is unclear. Some models predict an increase in rainfall on oceanic islands (e.g. Whetton *et al.* 1996), which may bring the Raso Lark some respite, but many areas of Cape Verde are suffering from desertification, and some of the larger islands are now scattered with abandoned villages. The most recent climate models suggest that the recorded drying of the Sahel zone since 1970 is partly due to the increase in greenhouse gases, and that it is likely

to get worse in the future (Held *et al.* 2005). This would reduce the average population of the Raso Lark still further and make its extinction a probability.

Cape Verde is being promoted as a major tourist destination, and an increasing number of unregulated visits to Raso by tourists unaware of the fragility of the island's ecosystem poses a major threat. Visitors to Raso can take precautions to minimise their impact on the larks and other birds, and can even contribute positively to research and conservation. Most important is to take precautions to prevent the accidental introduction of mammals, through appropriate packaging of transported food and other supplies. Accidental introduction of non-native species to oceanic islands can occur very easily; research on another Atlantic island suggests that one insect species becomes successfully established every three or four visits made by humans (Gaston *et al.* 2003).

Visitors arriving on Raso will often encounter local fishermen from São Vicente and Santo Antão, who stay for several nights each week on Raso. Some of these fishermen illegally harvest young seabirds for food in October and November, and may therefore resent the presence of visitors and the lark they come to see. The co-operation and goodwill of these islanders is crucial to keeping Raso clear of cats and other predators, and visitors are encouraged to take small gifts for them where possible and to treat them with the courtesy and respect they deserve. Once on the island, it is extremely important that visitors take great care where they walk or camp. Areas where holes are being excavated are extremely important, and great care must be taken to avoid standing on and collapsing them. If birds are seen carrying food or behaving nervously, it is likely that a nest is nearby and the area should be avoided. While on the island, visitors are likely to encounter birds fitted with coloured plastic and metal leg-rings; the authors would be most grateful to receive details of any ring combinations recorded. Finally, visitors spending more than a day on the island may have the time to get some estimate of the population and distribution of Raso Larks, and possibly of any introduced mammals, and such information would be gratefully received by the authors.

The Raso Lark has a smaller world population than such conservation *causes célèbres* as

the Californian Condor *Gymnogyps californianus*, the Seychelles Magpie-robin *Copsychus sechellarum* and the Mauritius Kestrel *Falco punctatus*, all of which owe their survival to dedicated and expensive conservation initiatives. At present, no specific conservation measures are in place for the Raso Lark, although the species has been protected under Cape Verde law since 1955. Raso was designated a National Park in 1990 and official permission is required to visit, although this is rarely sought and the island enjoys nothing more than nominal protection. This lack of conservation effort is probably due to a number of factors, including the remoteness of Raso and the difficulty of working there; the lack of an empowered conservation community on Cape Verde; the absence of any simple solutions; the lack of appreciation of the species' status; and (dare we suggest it?) the Raso Lark's less-than-spectacular physical appearance. Regular monitoring of the species, regular checks that mammals have not reached the island and the careful management of visitors to the island are minimum conservation requirements, but the best chance of ensuring the species' long-term survival may lie in the eradication of cats from neighbouring Santa Luzia and the establishment of a population of Raso Larks there. Recent visits confirm that there is much apparently suitable habitat on this larger island (Donald *et al.* 2005). That the Raso Lark has survived for so long appears miraculous, and it clearly has a great deal more to tell us about island biogeography. How much longer it will survive without careful and sensitive conservation action is unclear.

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Bird Photograph of the Year 2006

The competition produced another series of great images and provided a fascinating day for the judges, provoking debate, admiration, and sheer enjoyment in equal measure.

The format of the competition remained unchanged, which is to produce the best and/or the most scientifically interesting photograph of a Western Palearctic species. Interesting behaviour, novel or particularly skilful work by the photographer or aspects of bird photography that strike the judging panel as new or unusual

inevitably score highly. As in previous years, the judging procedure remained the same: two viewings of all the entries, using both slide and digital projectors, after which the entries were reduced to a final shortlist of 13, the details of which are given overleaf.

The inexorable march from transparencies to digital images continues apace: from about 15% digital entries in 2004, to 65% in 2005, and 88% this year. We will, of course, continue to welcome transparency entries for the competition, but at this rate we do not expect to receive many transparencies next year!

The increase, both in absolute terms and in proportion, in digital entries inevitably has resulted in some differences from the more traditional transparencies. In particular, since post-processing software allows modification of the original image, the rules ask for minimum manipulation, and to enable the judges to assess the degree of manipulation used, competitors are asked to submit both the final processed image for judging, and the original, unprocessed image so that changes may be assessed. All the entries were given minimum, but appropriate, manipulation (curves, unsharp-mask, etc.), but in some cases the judges thought that the degree of cropping was excessive, to the extent that both the pictorial quality and an indication of habitat were reduced. For this reason, it is proposed that for next year the degree of cropping will be restricted. Check the rules before you submit next year. Apart from that, the rules for digital entries have served well for the past three years.

Another trend the judges have noticed, as readers will see, is a significant increase in entries involving birds in flight. Though capturing birds in flight is still not easy, the advent of auto-focusing in the late 1980s has continued to develop so that the proportion of successful shots has improved, though the judges are well aware, from their own experience, that some photographers are better at flight photography than others!

In first place this year is Chris Knights'

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1st	Great Crested Grebe <i>Podiceps cristatus</i>	(plate 213)	Chris Knights
2nd	Lammergeier <i>Gypaetus barbatus</i>	(plate 214)	Philip Mugridge
3rd	Firecrest <i>Regulus ignicapilla</i>	(plate 215)	Hugh Harrop
4th	Marsh Harrier <i>Circus aeruginosus</i>	(plate 216)	Robert Snell
5th	Moorhen <i>Gallinula chloropus</i>	(plate 217)	Chris Knights
6th	Griffon Vulture <i>Gyps fulvus</i>	(plate 218)	Philip Mugridge
7th	Red Grouse <i>Lagopus lagopus</i>	(plate 219)	Wayne Richardson
8th	Little Grebe <i>Tachybaptus ruficollis</i>	(plate 220)	Mike Lane
9th	Black-headed Gull <i>Larus ridibundus</i>	(plate 221)	Steve Young
10th	Black-headed Gull <i>Larus ridibundus</i>	(plate 222)	Mike Lane
11th	Black Woodpecker <i>Dryocopus martius</i>		Gordon Langsbury
12th	Arctic Tern <i>Sterna paradisaea</i>		Steve Young
13th	Great Bustard <i>Otis tarda</i>		Gordon Langsbury

Digiscoping winner:

Black-shouldered Kite <i>Elanus caeruleus</i>	(plate 223)	Mark Piazzi
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absolutely stunning shot of a Great Crested Grebe *Podiceps cristatus* reacting aggressively to a nearby, but out-of-frame rival. The judges particularly enjoyed the wonderful wall of water thrown up by the bird in its charge towards the intruder. Chris described how the picture was taken: 'Photographed at Rutland Water [Leicestershire] from one of the hides. There were two grebes displaying and a third bird kept being chased off by the male of the displaying pair; on this occasion he charged straight at the lens.' This was regarded by the judges as an outstanding winner, reflecting all that could be expected from the winning photograph of the competition: action, behaviour, composition, accurate focus, and the need for only minimum cropping. It was scored as a clear winner.

Chris Knights has now won this competition on no fewer than three occasions. Readers will remember his Sky Lark *Alauda arvensis* in flight of 2003 (*Brit. Birds* 96: 318–326) and nesting Great Crested Grebe feeding a feather to one of its chicks in 1985 (*Brit. Birds* 78: 211–216). With his third victory, he now joins Jens Eriksen (1997, 1998, 2004) and Roger Tidman (1996, 2001, 2002) in a select group of three-time winners. Chris will receive an outdoor jacket from Sprayway, books of his choice from HarperCollins and A&C Black and a cash prize, as well as the traditional inscribed salver for the competition's overall winner.

In second place is a photograph of a Lammergeier *Gypaetus barbatus* in flight – the first of four flight shots to make the top ten this year –

by Philip Mugridge. The judges very much liked the well-lit bird, the wisp of cloud behind and below it, the feather-sharp image, and the positioning of the bird in the frame. The image was taken at a feeding site in the Spanish Pyrenees, from a hide. Prizes for second and third place this year comprise a selection of books chosen by the award winners from HarperCollins and A&C Black, and a cash prize.

Third place was given to Hugh Harrop's unusual shot of a Firecrest *Regulus ignicapilla* singing. Hugh described the circumstances surrounding the taking of this image: 'Late March saw me in the Sierra de Guadarrama [Spain] for a couple of days... From the upper deck of a mountain lodge near Puerto de Navacerrada, I could hear a Firecrest singing. With the aid of some very thin 'pishing', the bird came from the top of the tree almost to eye level and sat in full view for about 20 seconds. I managed a very pleasing series of images and to my eye this [one] stands out for the reason that it portrays such a tiny bird singing so vociferously.' The judges shared Hugh's enjoyment of this fine photograph.

In fourth place is Robert Snell's image of a female Marsh Harrier *Circus aeruginosus* with nesting material, commended by the judges as not only a fine image, but also a fine record of interesting behaviour. Robert described how the photograph was taken: 'Many hours were spent in a camouflaged hide, observing these won-

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213. BIRD PHOTOGRAPH OF THE YEAR 2006 Great Crested Grebe *Podiceps cristatus*, Rutland Water, Leicestershire, March 2005 (Canon EOS ID Mark II; Canon 500-mm IS lens with 1.4x converter; 1/500, f7.1, ISO 400). Chris Knights



214. SECOND ADULT Lammergeier *Gypaetus barbatus* in flight, Spanish Pyrenees, October 2005 (Canon EOS 1D Mark II; Canon 500-mm IS lens; 1/800, f5.6, ISO 200). Philip Mugridge



215. THIRD Firecrest *Regulus ignicapilla*, Sierra de Guadarrama, Spain, March 2005 (Canon EOS ID Mark II; Canon 400-mm DO IS lens; 1/500, f5.6, ISO 200), Hugh Harrop

derful birds. This shot was taken at 7.08 am on 18th July 2005, a day that proved to be most rewarding. The chicks were obviously developing and the nest was getting cramped and dirty. The adult female bird was very intent on new reed material, for re-lining the nest, and, for 30 minutes flew in repeatedly with new reeds. To capture the bird in flight, with the reeds gripped in the talons in the early morning light, showing all the bird's plumage, was superb, and this shot was the best of many taken. No digital manipulation, from the original file.'

A second of Chris Knights three submissions was also shortlisted, and was placed fifth. Like his winning image, this too is a superb action shot, of a Moorhen *Gallinula chloropus* carrying an egg. The egg had been pierced by the lower mandible, so the upper part of the shell was being held in the bird's bill. The image is sharp, there is a trail of water in the wake of the Moorhen, giving the impression that it is walking on water. Chris reported that: 'A pair of Moorhens had chicks and was feeding them on very small prey taken from water weed and the grass banks. The Moorhens were very aggressive to Coots *Fulica atra*, Avocets *Recurvirostra avosetta*, Mallards *Anas platyrhynchos* and Black-headed Gulls *Larus ridibundus*; the last

species also attacked the Moorhens. The Moorhen made a slow walk round and across to where the Avocets and Black-headed Gulls were nesting on a small island. It then made a mad dash back with an Avocet's egg in its bill to where its young were waiting under the bank.' BWP (Vol. 2, p. 581) states that the Moorhen 'occasionally eats (or feeds to young) shell and contents of eggs of birds, up to those of Mallard *Anas platyrhynchos* in size'. A fine record of interesting behaviour.

In sixth place is another second submission, this time by Philip Mugridge, of a Griffon Vulture *Gyps fulvus* landing, full of detail, with the head of the bird unobscured. This image, like that of the Lammergeier in second place, was taken from a hide overlooking a feeding site in the Spanish Pyrenees, on the same day in October 2005 – obviously a productive site for Philip! The judges particularly enjoyed the apparent expression of concentration on the bird's face as it landed, presumably intent on avoiding other vultures already at the site.

An offbeat image of a Red Grouse *Lagopus lagopus* by Wayne Richardson was placed seventh. Explanation can be left to Wayne, who entitled it 'TWOC – Taken Without Owner's Consent!' He described the circumstances of the photograph thus: 'Unfortunately, TWOC is still

216. FOURTH Marsh Harrier *Circus aeruginosus*, Cambridgeshire, July 2005 (Canon EOS 10D; 500-mm f4.5 lens; 1/500, f8, ISO 800). Robert Snell



rife on Teesside, where cars are stolen from urban/residential estates and, when the thieves have had their 'fun', usually dumped in rural areas. The 'twockers' then torch the car to destroy any evidence. On this occasion, early in December, the trashed vehicle had been commandeered by a male Red Grouse. The lack of rust suggests that the dumping was very recent and I hadn't seen the car a few days earlier when working in the area. No doubt the grouse thought it was a definite 'girl puller' and was certainly bragging the fact to his nearby rivals. The image was cropped along the top to remove a sliver of overexposed sky. Certainly an image with a difference!

In eighth place was an image of a Little Grebe *Tachybaptus ruficollis* by Mike Lane. The judges admired the action, and particularly the trail of water thrown up by the grebe. Mike explained: 'Taken on a canal in Derbyshire where these grebes are very approachable. They are very prone to chasing each other up and down and skim across the water like penguins.'

Steve Young's image of Black-headed Gulls in the rain was placed ninth. The judges liked this as a behavioural shot with a difference. Few photographers try to take shots in the rain, and this shot is both informative and a fine composition. Steve explained: 'I always enjoy pho-

tographing birds in the rain; I just don't enjoy getting wet while I'm doing it... But trapped in the hide at Seaforth NR [Merseyside] during an August downpour was no hardship; I'd spent most of the day here anyway so another hour wouldn't make any difference. This group of moulting Black-headed Gulls arrived in the rain and began to bathe and preen, but as the rain became stronger feather maintenance was abandoned in favour of bill-pointing into the rain-drops. I've photographed this behaviour before, but this group managed to pose themselves into a nice circle while I took a few images. Shooting at a low shutter speed is always difficult but it was necessary to use an f16 aperture to bring all the birds into focus. This was the only sharp shot of that short session.'

Another behavioural shot by Mike Lane was placed tenth: a Black-headed Gull in flight carrying nesting material: 'Taken on Texel off the coast of Holland while photographing the famous Avocets there. Black-headed Gulls and Common Terns *Sterna hirundo* were nesting on the same pool and were all flying back and forth building nests or feeding.'

The judges were disappointed that there were so few entries for the digiscoping prize,

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217. FIFTH Moorhen *Gallinula chloropus*, Norfolk, May 2005 (Canon EOS IDs Mark II; Canon 500-mm IS lens with 1.4x converter; 1/640, f11, ISO 400). *Chris Knights*





218. SIXTH Griffon Vulture *Gyps fulvus*, Spanish Pyrenees, October 2005 (Canon EOS 1D Mark II; Canon 500-mm IS lens; 1/1250, f5.0, ISO 320). Philip Mugridge

219. SEVENTH Red Grouse *Lagopus lagopus*, North Yorkshire, December 2005 (Nikon D100; Sigma 500-mm f4.5 lens; 1/1000, f5.6, ISO 400). Wayne Richardson





220. EIGHTH Little Grebe *Tachybaptus ruficollis* Derbyshire, February 2005 (Canon EOS 1D Mark II; Canon 300-mm f4 lens; 1/1600, f5.6). Mike Lane

221. NINTH Black-headed Gulls *Larus ridibundus*, Seaforth, Merseyside, August 2005 (Nikon 1DX; 800-mm f5.6 Nikkor lens; 1/30, f16, ISO 200). Steve Young



Mike Lane



222. TENTH Black-headed Gull *Larus ridibundus*, Texel, The Netherlands, May 2005 (Canon EOS 1Ds Mark II; Canon 600-mm f4 lens; 1/2500, f5.6).

Mark Piazza



223. DIGISCOPING WINNER Juvenile Black-shouldered Kite *Elanus caeruleus*, Portugal, August 2005 (Nikon Coolpix 4500; Leica APO Televid telescope with 20–60× zoom; camera zoom set at 32 mm, telescope about ×30; 1/101 sec, f5.1, ISO 100).

introduced last year. The winning shot of this category, showing a juvenile Black-shouldered Kite *Elanus caeruleus* with prey, digiscoped by Mark Piazza in Portugal, is, however, a fine entry, well up to the standard anticipated. The judges hope that it will encourage many more such entries next year. Mark will receive a cash prize from the Eric Hosking Charitable Trust, and a selection of outdoor clothing from Craghoppers.

The prizes for the winners, second and third place will be presented at this year's British Birdwatching Fair at Rutland Water, in August. We wish to take this opportunity to thank our sponsors, Sprayway (www.sprayway.com), HarperCollins (www.harpercollins.com), A&C Black (www.acblack.com), Craghoppers (www.craghoppers.com) and The Eric Hosking Charitable Trust, once again for their support, without which this competition would not continue. Next year's competition will assess photographs taken during 2006, and the rules will be announced in the January 2007 issue of *BB*, and on our website www.britishbirds.co.uk.

Richard Chandler, Tim Appleton, Robin Chittenden, David Hosking and David Tipling
c/o 4 Kings Road, Oundle, Peterborough PE8 4AX

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Windfarm wipes out White-tailed Eagles

It's a very grim case of 'we told you so'. The White-tailed Eagle *Haliaeetus albicilla* population on the Smøla archipelago in Norway has been decimated by an ill-advised windfarm.

This year, only one eagle is expected to fledge from the windfarm site on the bird's former stronghold of Smøla, a set of islands about 10 km off the coast of northwest Norway. Turbine blades have killed nine eagles in the last ten months, including all three chicks that fledged last year (five eagles were found dead on the Smøla windfarm site in April and May alone, including two of the three young birds raised in 2005).

There were up to 19 pairs of White-tailed Eagles breeding on the 20-km² windfarm site before construction work started in 2001; this year, just one pair has young. Those 19 pairs led BirdLife to designate Smøla as an Important Bird Area (IBA) in 1989 because it had one of the highest densities of White-tailed Eagles in the world. BirdLife consistently warned the Norwegian Government that Smøla was therefore totally inappropriate for a windfarm development.

Moreover, there are fears that windfarms planned for the rest of Norway – there are more than 100 proposals – could replicate the Smøla experience (Norway is the most important country in the world for White-tailed Eagles). Dr Rowena Langston, Senior Research Biologist at the RSPB, said: 'Smøla is demonstrating the damage that can be caused by a windfarm in the wrong location. The RSPB strongly supports renewable energies, including wind, but the deaths of adult birds and the three young hatched last year make the prospects for White-tailed Eagles on the island look bleak. There are

other windfarms close to Smøla which are putting more eagles in jeopardy too. The deaths of these birds show just how inadequate existing decision-making processes are for new technologies such as windfarms. Developers and governments should be taking note: these types of impact must be properly considered and acted upon when proposals are first made to avoid the unnecessary losses we are witnessing on Smøla.'

Researchers are now running weekly checks for dead birds at the 68-turbine Smøla site and pressure is mounting on the Norwegian Government to improve environmental assessments, both from conservationists and from the windfarm operator, Statkraft.

At the same time, the RSPB is backing a new four-year study at the site, by the Norwegian Institute for Nature Research (NINA), to assess the effects of turbines on swans *Cygnus* and waders such as European Golden Plover *Pluvialis apricaria*, Dunlin *Calidris alpina* and Whimbrel *Numenius phaeopus*, and on the ability of White-tailed Eagles to adapt to the windfarm.

The Norwegian Government ignored warnings of the consequences for wildlife of the Smøla windfarm before it was built. Dr Mark Avery, Conservation Director at the RSPB, said: 'The eagles' deaths confirm the fears we expressed at that time and show how devastating a poorly sited windfarm can be.'



Iain Leach

224. White-tailed Eagle *Haliaeetus albicilla*, Scotland, June 2006.

Battle for The Wash

The future of the UK's most important waterbird site was debated at a public inquiry in late June. More than 400,000 birds of 30 different species are at risk from industrial-scale shellfishing, which is seriously damaging The Wash Special Protection Area (SPA), the 63,000-ha bay between the Norfolk and Lincolnshire coasts.

Fishermen blame Common Eiders *Somateria mollissima* in particular for feeding on mussels (Mytilidae) and are demanding the right to protect their commercial mussel lays (artificial beds) by scaring birds off. The RSPB says that shellfishing must return to a sustainable level to protect the long-term future of both birds and fishermen. It fears that its three reserves on The Wash – Snettisham, Frampton Marsh and Freiston Shore – will be harmed if action is taken against the birds.

The RSPB's Mark Avery said:

'The Wash is the UK's most important site for waterbirds in winter and migrating birds in spring and autumn. It is protected by international, European and UK law because of its value to wildlife. Shellfishing is now far more intensive and far more mechanised, and thousands of birds are struggling to survive the winter as a result. The area will soon become an intensively farmed patch of water if shellfishing is not curbed. Industrial farming on land has devastated wildlife and the same is happening on The Wash.'

Despite its numerous designations – it is also classified as a Ramsar site – many parts of the site are in poor condition. Fisheries are to blame, particularly shrimp (Decapoda) and mussel fishing, dredging for cockles *Cardium* spp., and the failure to allow natural mussel beds time to recover after extensive overfishing. Overall, birds that eat shellfish, including Oyster-

catcher *Haematopus ostralegus*, Red Knot *Calidris canutus*, Common Shelduck *Tadorna tadorna* and Pintail *Anas acuta*, have dropped in number by more than 100,000 on The Wash. Furthermore, Common Eiders have declined across northern Europe, and the species is Amber-listed in the UK.

Mechanised shellfishing takes the food on which birds such as the Oystercatcher depend. It also harms the invertebrate prey sought by other species such as Dunlin and Common Redshank *Tringa totanus*. Shellfishing has already seriously damaged the Wadden Sea, off the Dutch coast, and as a result the Dutch Government has introduced measures to protect wild birds while allowing sustainable fishing at the same time. The RSPB is calling for similar action to safeguard The Wash. The inquiry inspector's recommendation to Defra will be made known later this year.

Songbird summit for Europe's rarest passerine

It's the rarest songbird in mainland Europe – and also the randiest! But despite its enthusiastic polygamy, the breeding population of Aquatic Warbler *Acrocephalus paludicola* has plummeted by 95% since the 1900s and there are now only 16,000 singing males left, in just seven European countries.

Representatives from those countries – and a further seven nations on the warbler's migration route and wintering grounds – met in Germany at the end of June to discuss its future. Aquatic Warblers nest in the wet meadows of eastern central Europe and migrate more than 5,000 km to Africa for the winter. The species was once widespread and numerous in wetlands across continental Europe, but most of these habitats were drained for agriculture in the twentieth century, and the bird is now confined to strongholds in eastern Poland, Belarus and Ukraine, a small but growing number in Hungary, and tiny, diminishing populations in 'Pomerania'

(eastern Germany and northwest Poland) and west Siberia.

The Aquatic Warbler is Globally Threatened and, faced with the bird's imminent extinction, BirdLife has championed its cause since the mid 1990s, when expeditions to under-explored parts of Belarus discovered the three key breeding sites for the species, which together hold 60% of the world population.

The June meeting concluded that the main success of recent years has been the stabilisation of the core breeding population in its largest breeding sites, while the loss of smaller breeding sites and especially the critical decline in Pomerania are highly alarming. It is also crucial for the bird's effective future protection to find the elusive wintering sites of the species in West Africa.

Later this month, the Aquatic Warbler will once again be in the spotlight when students of its breeding biology meet in Palencia, Spain. Readers of a delicate dispo-

sition should look away now because *paludicola* has an impressive sexual cv.

Researchers investigating the sex life of this skulking *Acrocephalus* have uncovered a pattern of promiscuous behaviour, with male birds 'continuously ready to mate and testing every female for her willingness to copulate'. Almost two-thirds of all broods of young Aquatic Warblers have more than one father.

In addition, the male birds are particularly well endowed (in proportion to their size), with cloacal protuberances, testes and seminal glomera being extraordinarily large compared to those of other *Acrocephalus* species and of birds in general. In contrast to most birds, whose mating lasts a mere 1–2 seconds, Aquatic Warblers spend up to 35 minutes copulating, the average being 23.7 minutes – thought to be a record among songbirds. So although it's threatened with extinction, the Aquatic Warbler is certainly doing its bit to prevent that happening!

Europe threatens legal action against Malta

BirdLife has welcomed the decision by the European Commission to open a legal infringement procedure against the Maltese Government for allowing the spring hunting of Turtle Doves *Streptopelia turtur* and Common Quail *Coturnix coturnix*. This infringement of the Birds Directive has taken place in Malta for three consecutive years since Malta joined the EU in 2004.

This spring hunting season not only breaches EU law, but also provides cover for the illegal hunting of many other species. 'BirdLife welcomes [the fact] that the European Commission won't tolerate this any longer and that it has committed itself to take legal action in case Malta does not end spring hunting,' said Konstantin Kreiser of BirdLife's Brussels office.

The Maltese Government will now have to ensure that no spring hunting takes place from 2007 onwards, otherwise it will be taken

to the European Court of Justice. When Commission officials made a fact-finding visit to Malta, the Maltese Government attempted to justify spring hunting by arguing that Turtle Dove and Quail had to be hunted then, because it was the only time that they occur on the island. However, both species pass through Malta on their return migration in autumn.

'The Maltese Government made a poor case before the Commission because there is actually no excuse for the continuation of spring hunting in Malta. It is unfortunate that the consequences of this decision – ultimately a penalty could be imposed by the Court – will be borne by the Maltese public, when in fact the majority are in favour of a total ban on hunting. It is now time to improve law enforcement in Malta – the Government must stop defending the illegal and immoral actions of the few at the expense of the Maltese

public,' said Joseph Mangion, President of BirdLife Malta.

Since there are c. 16,800 registered hunters and trappers in Malta in a population of 400,000, some estimates put the annual number of birds killed at roughly two million. In the past three spring seasons, Malta has allowed Turtle Doves and Quails to be hunted from 25th March to 22nd May. This is in breach of the EU Birds Directive Article 7(4) because this hunting season overlaps with the pre-breeding migration of these species. The Turtle Dove has declined by approximately 70% across Europe over the last 25 years.

With legal action looming, the Maltese Government made some amendments to its hunting laws earlier this year (*Brit. Birds* 99: 270–271). These included a ban on shooting birds from speedboats – but still included provision for spring hunting. The European Commission has now vetoed that.

Chaffinch trapping proposed in Belgium

Meanwhile, the prospect of bird trapping in the European Commission's own backyard has reared its ugly head. A group of Christian Democrat and Liberal members of the Flemish (Belgium) Parliament has tabled a proposal for the reintroduction of Common Chaffinch *Fringilla coelebs* trapping in the Flanders region until 2013. The reason is that captive-bred birds apparently do not sing as well as wild ones and therefore the standard of singing competition is declining!

On 30th June 2006, a so-called 'finch decree' was presented in the Flemish Parliament. The initiative is the result of complaints by 'bird lovers' who have complained to their local MPs about the allegedly poor quality of the song of captive-bred Chaffinches. As evidence of this, the would-be trappers refer to a current study (right) where the importance of song quality has been demonstrated in captive-bred finches. Alex Hirschfeld from the German Committee against Bird Slaughter (CABS) states: 'The study in fact proves that the song of Chaffinches in the wild is based on strong sexual selection stress. The volume and intensity of the calls help the females in the wild to estimate the quality and health of potential partners. In captivity, where pairing as a result of random natural selection does not occur, the musical quality is at best of average quality.'

Hirschfeld goes on: 'To use this rather banal biological fact as a reason for the reintroduction of bird trapping is outrageous and completely frivolous.' The Belgian Bird Protection Society's campaign against this proposal (with more information and a draft e-mail text in English and Flemish) can be found on the Proact website at: www.proact-campaigns.net/localcampaigns/chaffinch_flanders.html

'Sexy' bird song leads to larger eggs

Research by Prof. Clive Catchpole of Royal Holloway, University of London, and Dr Stefan Leitner of the Max Planck Institute for Ornithology in Germany, published in the latest issue of *Ethology*, shows how female Canaries *Serinus canaria* can alter the size of their eggs and possibly the sex of their chicks according to the quality of the male's song. Captive female Canaries were exposed to attractive ('sexy', i.e. containing more-complex structures) and less attractive songs. When the females started laying eggs, the size of the eggs varied according to the 'attractiveness' of the male song: the more attractive the song, the larger the eggs.

The findings also show that the females cannot control all the reproductive factors. For example, in the wild, larger eggs are more likely to hatch male offspring, but in the experiment this was not the case. Despite not ruling out the possibility that female Canaries can alter the sex of their offspring, the findings do suggest that hearing a 'sexy' male bird song has a selective impact on female physiology.

First cases of bird flu caught from wild birds

It's been confirmed that four people who died from bird flu in Azerbaijan (*Brit. Birds* 99: 221) contracted it from dead Mute Swans *Cygnus olor*. The victims, from a village 150 km southeast of the Azeri capital, Baku, are believed to have caught the lethal H5N1 virus earlier this year when they plucked the feathers from dead birds to sell for pillows. Three other people were infected with the virus after handling the swans but survived. Andreas Gilsdorf, an epidemiologist at the Robert Koch Institute in Berlin, who led the team that made the discovery, said: 'As far as we know this is the first transmission from a wild bird, but it was a very intensive contact. We know that the virus is carried by swans and we know that you can catch the virus if you have close contact, so it doesn't change anything. It's just the first time it has been reported.'

Almost all of the 220 other confirmed human cases of bird flu, including 130 deaths, have been linked to infected domestic

poultry. A handful are believed to have caught the disease directly from infected humans. The cluster of cases in the Salyan district of Azerbaijan was first reported in March. Six of the seven, all aged between 10 and 20, were from the same family. Relatives initially denied any contact – hunting and trading wild birds and their products there is illegal – but eventually admitted that the victims had plucked the feathers from dead swans among a huge number of the birds to have died in February.

Only one wild bird has been found with H5N1 in Britain in recent years, the dead Whooper Swan *C. cygnus* found in Fife in April this year. But surveillance of migratory birds returning this autumn is likely to be far greater and more targeted on certain wild-fowl than it was this winter and spring. Andy Evans, Head of Terrestrial Research for the RSPB, said: 'You have to get extremely close to an infected bird. Most cases are associated with poultry and preparing poultry for the pot. This

is essentially the same process. If you have extremely close contact with an infected carcass, it is possible to contract the disease, but it remains difficult.'

The Health Protection Agency said: 'Our advice remains the same, if you see a dead bird, don't pick it up.' Defra said that its scientific advisers regarded the risk of bird flu being transmitted to humans from wild birds as small. Separately, the World Health Organisation has confirmed fears that a cluster of cases in Indonesia was caused by the virus passing directly from person to person. Seven people died, but officials insisted that there was no risk of wider transmission. Scientists found that the virus had mutated slightly, but not into a form that could be passed on easily.

The BOU (www.bou.org.uk) is holding a two-day conference in Peterborough on 20th–21st November 2006 entitled *Avian influenza and other bird diseases*.

Birdfair XVIII

The British Birdwatching Fair (www.birdfair.org.uk) pitches camp at Rutland Water again on 18th–20th August. The project for the 18th Birdfair is *Saving the Pacific's parrots*, specifically the threatened species in New Caledonia, Fiji, Samoa, the Cook Islands and French Polynesia (and no, Polynesia is not a forgetful parrot!).

Since 1500, 68 of the 133 documented bird extinctions on the planet have been in the Pacific. Currently there are 289 Globally

Threatened species in the region, of which 37 are Critically Endangered. Alongside other Pacific island endemics, small parrots have suffered from forest clearance and nest predation by rats. They are also attractive prizes for hunters supplying the pet trade. For much more background see *Pacific islands: a paradise lost?* in the June 2006 edition of BirdLife's *World Birdwatch* magazine.

The staff and directors of *British Birds* will be on site

throughout the Birdfair at Stands 23 & 24 in Marquee 3. Do come along and say hello and tell us what you think about the journal. In addition, Bob Scott will be giving his talk on '100 years of *British Birds* and birdwatching' at 5 pm in the Lecture Marquee on the Saturday. Yes, *BB* celebrates its centenary in 2007! We have some excellent special issues of the journal planned for our 100th year and hope all our readers are going to celebrate this milestone with us.

Bird Holidays go carbon neutral

One of the many bird-tour companies at the Birdfair will be the Leeds-based Bird Holidays (www.birdholidays.co.uk), which has recently become the first travel company in the world to carbon-balance its air travel.

The company's four tour leaders have bought 65 acres of deforested land adjacent to the Yanacocha reserve near Quito in Ecuador, the only place in the world where a splendid hummingbird called the Black-breasted

Puffleg *Eriocnemis nigrivestis* is found. The land will now be replanted with 20,000 native trees grown in a nursery from seed harvested from the existing reserve; the growing forest will be cared for by the local community in collab-

oration with conservation group Fundación Jocotoco.

Bird Holidays has paid for the land, the reforestation and the management costs for the next 20 years. The money has come out of the pockets of the four principal tour guides: Roger Barnes, Phil Palmer, Andy Woodall and Paul Willoughby, all of whom deserve a big pat on the back. These guys have thrown down the gauntlet to the rest of the bird-tour companies – and the wider travel industry – because the growing forest in Ecuador will soak up an equivalent amount of carbon dioxide to that generated by all the flights taken by

all Bird Holidays tour groups for the next 20 years!

The company worked with the conservation charity the World Land Trust (www.worldlandtrust.org) to achieve carbon neutrality. Scientists from the Trust visited the site to measure and count trees on the existing reserve to determine how much carbon is locked up in this type of forest. They measured soil depths and took samples to work out how much carbon is held in the ground (unlike rainforest, cloud forest has a thick layer of topsoil with a high carbon content). They looked at the air travel undertaken by Bird Holidays'

leaders and clients, and calculated how much carbon will be released into the atmosphere. The calculations allowed for growth in Bird Holidays' business. The World Land Trust then used protocols laid down in the Kyoto agreement to work out how much land would be needed to fully offset these emissions, and they built in an extra 25% to take account of possible variations and unknowns associated with the project. It's now up to the trees to do the rest of the work.

If any other bird-tour company has similar plans, we will be happy to publicise their efforts too.

Website of the month

Tens of thousands of birders will converge on Rutland Water this month for the annual Birdfair. But there's plenty of birding potential beyond the Egleton reserve to try out those new binoculars and 'scopes. Rutland is, of course, England's smallest county. For the last 65 years, its birding community has been served alongside that of its larger neighbour, Leicestershire, by the Leicestershire & Rutland Ornithological Society (LROS). Indeed, the LROS kept the faith when Rutland 'disappeared' for 20 years as a result of local-government reorganisation; LROS never lost its 'R'.

And it was to keep the name of Rutland alive that local people lobbied for the name 'Rutland Water' when the reservoir was created in the mid 1970s. Its original name was....? See below.

LROS has a very good website (www.lros.org.uk) with all the information that visiting – and resident – birders need. The Birding Sites section has detailed profiles of 15 major sites in the counties; a further 20 sites have brief summaries. Rutland Water is justifiably world famous because of the Birdfair. But there are plenty of other reservoirs and former gravel-pits in these landlocked Midlands counties to tempt the birder beyond the biggest one on the map.

The Latest Bird News is up to date and has some good photos too. As for the LROS News section, I'm sure there must have been something to report since June 2004! The Photo Archive is a work in progress, systematic group by systematic group, but is a great resource that all county bird clubs should have on their websites. Visit the website then try a visit to Eyebrook Reservoir, not too far from Empingham Reservoir aka Rutland Water.

Gulls a-glowing

Further to reports of radioactive gulls at Sellafield, Cumbria (*Brit. Birds* 99: 223), comes an intriguing report of glowing gulls in a Dorset coastal village. Prof. Graham Martin, of Birmingham University's Centre for Ornithology, raised the alarm with an e-mail to the BOU newsgroup. He explained: 'Several people in the village have reported that some of these gulls 'glow' at night. The only possible (if unfeasible) explanation is that the gulls have been feeding in an area populated with bioluminescent algae and that these have become stuck to their plumage. The "glow" is described as being blue-green, reasonably intense (clearly visible at a distance of 10 m or so) and particularly obvious under the wing when the birds flap them. Some of the reports also mention "sparking" between the bird and nearby buildings, which I would interpret as being droplets of algae luminescing as they are flicked off during preening.'

But this is not an isolated incident. Norman McCanch replied: 'I can confirm similar observations on gulls (and also on shearwaters) in Pembrokeshire and on the Calf of Man. Bioluminescent algae were the prime suspects, as they were regularly observed in the sea around the coast at the time and seemed more than usually noticeable. In particular, I recognise the "sparks" flicked off preening gulls around roosts late in the evening.'

So the mystery appears to be solved. If you've seen other glowing seabirds, do let us know.

Request

Sightings of colour-ringed 'alba' wagtails

During autumn 2005, over 500 White/Pied Wagtails *Motacilla alba alba/yarrelli* were colour-marked at Slapton Ley NNR, Devon, as part of an intensive study investigating the origins of the many thousands of wagtails (currently estimated at 30,000–50,000) passing through en route to France and Spain. Each bird carries a total of four rings, a BTO metal ring on the right leg and three coloured rings on the left leg.

Over 2,500 birds have been ringed at Slapton since October 2002, and these have generated recoveries from Scotland, Wales, The Netherlands and France. In

addition, there has been extensive co-operation with Icelandic birders/ringers as part of this latest study, which suggests that c. 60% of birds passing through Slapton during September are White Wagtails and that probably most are of Icelandic origin.

All sightings are required and will be acknowledged. Please send details to: Dennis Elphick, 2 Somerye, Chillington, Kingsbridge, Devon TQ7 2JU; e-mail dennis.elphick@tiscali.co.uk; tel. (01548) 580323.

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mid June to mid July 2006.

Ferruginous Duck *Aythya nyroca* Pett Level (East Sussex), 27th June. **Lesser Scaup** *Aythya affinis* Tittesworth Reservoir (Staffordshire), 1st July. **White-billed Diver** *Gavia adamsii* Gairloch (Highland), 14th June at least.

Black-browed Albatross *Thalassarche melanophris* Sula Sgeir (Western Isles), long-stayer to at least 1st July. **Wilson's Storm-petrel** *Oceanites oceanicus* The following were seen

during pelagic trips off Scilly: one, 16th June; eight, 18th June; five, 5 km southwest of Bishop's Rock plus one from St Mary's 26th June; two, 28th June; one, 6th July. Also, Brandon (Co. Kerry), 21st June.

Squacco Heron *Ardeola ralloides* Shapwick Heath (Somerset), 17th–18th June and 9th July. **Great White Egret** *Ardea alba* Tacumshin (Co. Wexford), 25th–27th June; Bassenthwaite Lake (Cumbria), 27th June to 1st July; Blashford Lakes, 3rd July, two 9th July, with presumably one of the same Portsmouth Harbour (both

www.irishbirdimages.com



225. First-summer male Montagu's Harrier *Circus pygargus*, Tacumshin, Co. Wexford, June 2006.



226. Adult Semipalmated Sandpiper *Calidris pusilla*, Back Saltholme Pool, Cleveland, July 2006.

Stef. McElroy

Hampshire), 5th July; Quoile Pondage (Co. Down), 5th July; Sturminster Gravel-pits (Dorset), 8th July; Grove Ferry (Kent), 9th July. **Black Stork** *Ciconia nigra* Alford (Lincolnshire), 20th June; South Renton/Auchencrow (Borders), 25th June and 7th–10th July.

Red-footed Falcon *Falco tinnunculus* Collafirth (Shetland), 12th June; Fladdabister (Shetland), 13th June; Budby (Nottinghamshire), 17th June; Gorleston-on-Sea (Norfolk), 7th July.

Black-winged Stilt *Himantopus himantopus* Martin Mere (Lancashire), two long-stayers to 29th June. **Semipalmated Sandpiper** *Colidris pusilla* Back Saltholme Pool (Cleveland), 5th–10th July. **Buff-breasted Sandpiper** *Tryngites subruficollis* Lossiemouth (Lothian), 27th June. **Long-billed Dowitcher** *Limnodromus scolopaceus* Goldcliff Pools (Gwent), 8th July. **Lesser Yellow-legs** *Tringa flavipes* Gibraltar Point (Lincolnshire), long-stayer to 24th June.



Jim Lawrence

227. First-summer male Red-footed Falcon *Falco tinnunculus*, Rookery Clay Pit, Bedfordshire, June 2006.

Laughing Gull *Larus atricilla* Burrafirth 19th June, presumed same Quendale, 22nd June, and Toab (all Shetland), 25th June. **Gull-billed Tern** *Gelochelidon nilotica* Worthing (West Sussex), 21st June; Camel estuary (Cornwall), 28th June to 4th July. **Bridled Tern** *Onychoprion onychoprion* The Minch, 11 km northwest of Rubha Reidh



John Carter

228. Eurasian Scops Owl *Otus scops*, Thrupp, Oxfordshire, June 2006.

Hugh Harrop



229. European Bee-eater *Merops apiaster*, Yell, Shetland, June 2006.

(Highland/Western Isles), 23rd June. Caspian Tern *Hydroprogne caspia* One flew south past Whitburn (Co. Durham) and Hartlepool Headland (Cleveland), 2nd July. Whiskered Tern *Chlidonias hybrida* Gibraltar Point, 20th–21st June. White-winged Black Tern *Chlidonias leucopterus*

Belfast Lough (Co. Down), 6th June; Harris (Western Isles), 16th June; Snettisham (Norfolk), 19th June; Worlabay Carrs (Lincolnshire), 30th June. Forster's Tern *Sterna forsteri* Belfast Lough, 2nd July.

Eurasian Scops Owl *Otus scops* Thrupp (Oxfordshire), from about 24th May to 29th June. Alpine Swift *Apus melba* Wheal Rose (Cornwall), 9th July. European Bee-eater *Merops apiaster* Gulberwick, two, 12th June, Yell, 13th–25th June, Fair Isle, 22nd June, Unst (all Shetland), 26th June; Easington (East Yorkshire), 24th June.

Paddyfield Warbler *Acrocephalus agricola* Whalsay (Shetland), 12th June. Great Reed Warbler *Acrocephalus arundinaceus* Sandwich (Kent), 15th June; Far Ings (Lincolnshire), 24th June; Loch of Kinnordy (Angus), long-stayer to 10th July. Lesser Grey Shrike *Lanius minor* Shingle Street (Suffolk), 8th–10th July. Woodchat Shrike *Lanius senator* Lucott Cross (Somerset), 24th–27th June. Rose-coloured Starling *Sturnus roseus* Harris (Western Isles), 6th–8th July. Pine Grosbeak *Pinicola enucleator* Blackmore (Essex), one of unknown origin, 1st–8th July.

Bill Baston



230. Lesser Grey Shrike *Lanius minor*, Shingle Street, Suffolk, July 2006.

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Re On the A25 between
id and Sevenoaks
Ball Station on
6 3 Sept, 10 Oct
& 27 Nov
Pa n Harbour LNR
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27 24 Sep & 29 Oct
Di Pastures Country
Pa near Reading (M4,
A3) Woodley turnoff
19 to Winnersh and
Station (B3030)
W 12 Nov
10

The Kent Wildlife Trust,
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Near Maidstone, Kent
8 Oct

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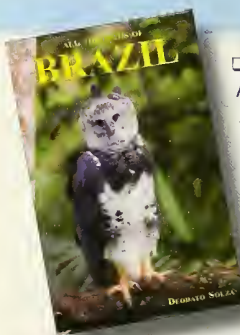
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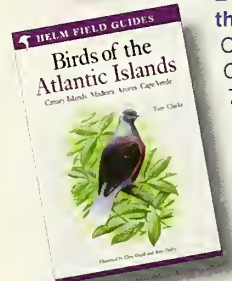
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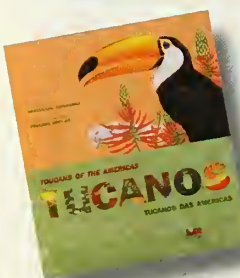
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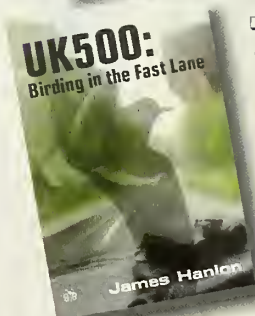
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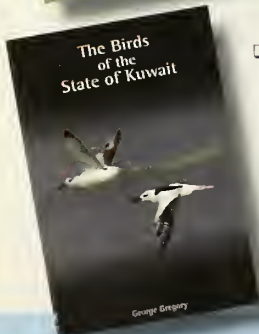
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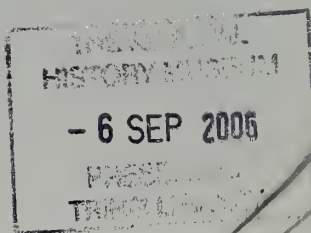


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American Black Tern

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American Black Tern at Weston-super-Mare: new to Britain

R. M. Andrews, R. J. Higgins and J. P. Martin

ABSTRACT A juvenile Black Tern *Chlidonias niger* of the American race *surinamensis* was found at Weston-super-Mare Water Treatment Works on 3rd October 1999, where it remained until 11th October. This represents the first record of this distinctive form in Britain. The identification of *surinamensis* is discussed in the context of separation from the nominate race of Black Tern.

On 3rd October 1999, after a typically birdless autumn morning at Chew Valley Lake, Avon, R. M. Andrews (RMA) decided to spend the rest of the day at Weston-super-Mare Water Treatment Works, where a Grey Phalarope *Phalaropus fulicarius* had been found the previous day. While walking around the reserve, looking for the phalarope, he saw a Black Tern *Chlidonias niger*, which had also been reported earlier. His first impression, as the tern flew away, was that it was a winter-plumaged adult, yet when it turned it looked more like a juvenile. With better views, it was clear that the bird was a juvenile, but a remarkably plain individual.

RMA had previously wondered whether the American race of Black Tern *C. n. surinamensis* (hereafter '*surinamensis*') could occur in Britain. In fact, following a report of one in Ireland about a month previously (Adriaens 1999), he had even checked the identification criteria in *Terns of Europe and North America* (Olsen & Larsson 1995). Now, a month later, the only features he could recall were white flecking in the cap, dusky flanks and that there was something different about the rump. Since this was the first Black Tern that RMA had encountered since reading the *surinamensis* account, he was somewhat taken aback to see that the cap was indeed unusually pale – more like that of a White-winged Black Tern *C. leucopterus* (hereafter '*leucopterus*'). In the bright sunlight, the rump was almost concolorous with the tail and back, unlike the rump of any juvenile Black Tern he had ever seen. He walked

round the pool to join R. J. Higgins (RJH) and J. P. Martin (JPM), who had already noticed that the tern's plumage was unusual but were still at the questioning 'it must be a juvenile but why is it so uniform?' stage. RMA suggested that it showed one or two features of *surinamensis* and, as we watched it, the greyish flanks were added to the list of pro-*surinamensis* features. We enjoyed prolonged views of the bird at reasonably close range and began to take detailed notes, becoming gradually more confident that it was no ordinary Black Tern.

We informed the bird information and pager services, and the bird was seen at the site by many observers until 11th October. JPM and RMA watched it again at different times on 4th and JPM once more on 8th October. Though the site was strictly speaking private, the staff at Wessex Water were most co-operative and there were minimal access problems. The initial reaction from other birders was fairly low-key, but interest increased as more people realised that *surinamensis* was being touted as a potential 'split' from the Old World form. A steady stream of 'insurance tickers' was swelled by the carloads of birders travelling to and from Scilly at the time.

Description

Size, shape and behaviour

Without direct comparison, it was difficult to be sure whether there were any differences in size, shape and behaviour from the nominate race *niger* (hereafter '*niger*') – none was obvious. Although at times JPM thought that it

perhaps looked slightly longer-billed, this could have been an illusion created by the paler forehead and crown. It fed in typical Black Tern fashion, surface-dipping over the pools, and also frequently towering high and hawking for insects with Black-headed Gulls *Larus ridibundus*.

Head

The head pattern was reminiscent of that of juvenile *leucopterus*. A dark 'headphones' mark on the ear-coverts contrasted with a restricted pale grey crown, apparently white with fine darker streaking. There seemed to be a slightly darker band across the hindcrown, which contributed to the 'headphones' effect, and an obvious white collar below this. When the tern flew towards the observer, the head was particularly striking, appearing practically white-capped. Photographs were particularly useful in determining the exact crown pattern, which was surprisingly difficult to judge on a constantly moving bird!

Upperparts

Overall, more uniform than upperparts of juvenile *niger*, and rather grey in tone, recalling a summer adult *niger* in some ways. The rump was virtually concolorous with the tail and lower mantle – a mid slate-grey. At some angles the rump appeared a shade paler, but any difference in tone was slight. Compared with juvenile *niger*, brown tones were subdued and more or less confined to the upper mantle, and there was an obvious, rather narrow, dark carpal bar. Individual coverts and scapulars could, in the best views, be seen to have a narrow and rather indistinct pale fringe, quite different from the more obvious pale scalloping on juvenile *niger*. The secondary bar was only marginally darker than the rest of the wing, whilst the primaries were similarly rather uniform. The tail was grey with possibly slightly darker outer rectrices. When we first saw it, in strong sunlight, the upperparts looked a clean grey. Later, in duller, overcast conditions, the brown tones were more obvious. These differences are apparent in the various published photographs of the bird.

Underparts

The dark brown patches on the sides of the breast (the breast 'pegs') were obvious, and larger than those on many, though not all, *niger*. A pale grey wash extended along the flanks



Carole Leigh

231. Juvenile American Black Tern *Chlidonias niger surinamensis*, Weston-super-Mare, Avon, October 1999. The grey flanks are obvious in this photograph.



Carole Leigh

232. Juvenile American Black Tern *Chlidonias niger surinamensis*, Weston-super-Mare, Avon, October 1999. The grey flanks are somewhat burnt out by the strong light and there seems to be a narrow dusky leading edge to the underwing.



George Reszeter

233. Juvenile American Black Tern *Chlidonias niger surinamensis*, Weston-super-Mare, Avon, October 1999. Note the uniform upperparts and the White-winged Black Tern *C. leucopterus*-like head pattern.

Table 1. Comparison of plumage and structural features of juvenile Black Tern *Chlidonias niger* of the American race *surinamensis* and the Old World race *niger*.

	<i>surinamensis</i>	<i>niger</i>
head pattern	Crown grey with pale flecks contrasting with a solid dark spot on the ear-coverts. White forehead appears slightly more extensive than on <i>niger</i> . Tone of the crown is similar to mantle.	Crown more extensively washed very dark brown, merging with the ear-coverts, with no contrast in tone. Crown conspicuously darker than rest of upperparts.
flank markings	Variable breast 'peg', on some similar to that of <i>niger</i> , on others larger. Behind this, flanks always washed grey to rear edge of wings, or merged with sides of rump. On some birds the dark breast peg merged into the grey flanks; typically the peg was distinctly darker.	All showed entirely white flanks behind the breast 'peg'.
general impression of upperparts	Overall darker and more uniform, with the marginally paler rump contrasting only slightly.	Overall paler, with contrastingly paler rump.
mantle and scapulars	Rather uniform with only slight contrast between smaller, dark brown, finely pale-fringed feathers of upper mantle, and larger feathers of lower mantle and scapulars, which show grey bases with fine pale buff fringes.	Browner, with warmer, almost ginger tones on some. More obvious pale fringes to feathers, especially broad and obvious on larger rear scapulars.
rump	Mid grey with fine white fringes, only slightly paler than mantle and tail.	Pale grey ground colour and broader, paler fringes create an obviously paler area, contrasting strongly with darker mantle and tail.
upperwing	Carpal bar narrow and not visible on many skins, so perhaps unlikely to be visible on a perched bird.	Dark carpal bar obvious on the skins and therefore probably also on perched birds.
tail	No obvious difference between the two races was apparent, although tail colour and pattern not easy to examine on skins.	
underwing	Difficult to determine, but underwing-coverts appeared off-white or pale grey.	Underwing-coverts hard to examine, but appeared white.
size and structure	No significant difference in bill length between the two forms, with almost complete overlap in measurements. Overall size of <i>surinamensis</i> seemed smaller and wings averaged shorter, but great overlap. These observations support extensive dataset in Olsen & Larsson (1995).	

from the breast pegs to at least level with the trailing edge of the wing. This feature was less obvious in strong sunlight or as dusk approached, but in good, flat light it was obvious even at moderately long range. The underwing-coverts appeared whitish in the field and the underside of the remiges light grey, with paler bases to the primaries. Photographs showed that the underwings were actually pale grey or off-white, with a dusky leading edge. McGeehan (2000) pointed out that *surinamensis* shows a narrow dusky band along the

marginal underwing-coverts (the leading edge), whereas this area is usually white in *niger*, and this may prove to be another useful character if looked for carefully in ideal viewing conditions. The underside of the tail was grey.

Bare parts

Bill and eye dark, blackish. Legs not seen – we never saw it perched.

Call

No call heard.

Table 2. Comparison of plumage features of adult Black Tern *Chlidonias niger* of the American race *surinamensis* and the Old World race *niger*, also referring to White-winged Black Tern *C. leucopterus* where appropriate.

	<i>surinamensis</i>	<i>niger</i>
		<i>Summer plumage</i>
body and upperparts	Head and body uniformly darker and blacker than on <i>niger</i> , as <i>leucopterus</i> , contrasting more with the upperparts, although these are darker than on <i>niger</i> . Leading edge of upperwing can be whitish (again as <i>leucopterus</i>). Head of females not quite so black as that of males (but still darker than that of female <i>niger</i>) and the throat is paler. Underwing-coverts often white or whitish, contrasting greatly with black body.	Head of males sooty-black fading gradually to the paler dark-slate body and flanks (latter nearly always paler than the head). Body colour merges rather smoothly with slightly paler upperparts. Females tend to be paler and have paler throat contrasting with a darker cap. Typically greyish underwing shows relatively little contrast with grey body, though can be white and contrasting in some.
		<i>Moult to winter plumage</i>
timing	Occurs later, starting from mid June, with many still in summer plumage in September, though earliest are in winter plumage in August. Late autumn birds in summer plumage in Europe are worth checking (though still perhaps more likely to be late-moulting <i>niger</i> than <i>surinamensis</i>).	Can start as early as late May. The great majority are in winter plumage earlier than <i>surinamensis</i> , by the end of September. Can, however, retain summer plumage into October and, exceptionally, even into November.
pattern	Typically differs subtly from <i>niger</i> in that an even scatter of white winter feathers appear, first around the face, to produce a mottled appearance much as <i>leucopterus</i> .	Rear lores, throat and area below eye moulted first followed by the rest of the head (fully moulted mid June to late July). Breast moulted from early July, belly later with lower belly and some flank feathers the last to be moulted. Adults with remnants of grey summer feathers on the flanks are a potential pitfall for <i>surinamensis</i> .
		<i>Winter plumage</i>
head pattern	Typically similar to juveniles: crown usually grey with pale flecks contrasting with a solid dark spot on the ear-coverts, recalling <i>leucopterus</i> in pale examples. In comparison with <i>niger</i> , appears to have slightly more extensive white forehead. Tone of the crown is similar to mantle. Some (possibly worn) birds have darker crowns.	Crown more extensively washed very dark brown, merging with the ear-coverts, with no contrast in tone. Crown conspicuously darker than rest of upperparts.
flanks	Grey wash along flanks as in juvenile though sometimes paler and less obvious.	White.
upperparts	Darker than on <i>niger</i> , the rump only slightly paler and hardly contrasting with the rest of the upperparts.	Paler grey with normally a paler rump.

Discussion

A Black Tern had been seen at the site on 2nd October, and this was almost certainly the same bird as that described above. Its arrival thus coincided with strong westerly winds, which brought the Grey Phalarope to the site and,

remarkably, a Wilson's Storm-petrel *Oceanites oceanicus* to nearby Berrow, Somerset. The 'American Black Tern' usually fed over the Ultra-violet Pools or the new Nature Reserve Pool, although it would occasionally disappear high over Bleadon Level with Black-headed

J. P. Martin © NHM, Tring



234. Adult winter Black Tern *Chlidonias niger* (below) and adult winter American Black Tern *C. n. surinamensis* (above). Note the darker grey upperparts of *surinamensis*, which are similar in tone to the crown, whereas the paler grey upperparts of *niger* contrast with the obviously darker crown. The latter also has a slightly paler grey rump, whereas the rump of *surinamensis* is uniform with the tail and mantle.

J. P. Martin © NHM, Tring



235. Juvenile American Black Tern *Chlidonias niger* *surinamensis*, showing typically greyish crown contrasting with darker ear-coverts.

J. P. Martin © NHM, Tring



237. Upperparts of juvenile Black Tern *Chlidonias niger* (above) and American Black Tern *C. n. surinamensis* (below). Note the more extensive and solidly blackish crown of *niger*, which is obviously darker than the rest of the upperparts, while *surinamensis* has a more restricted grey crown, much closer in tone to the mantle. Note also the latter's uniform grey rump, showing little contrast with the mantle, and its narrower and less distinct pale fringes to the mantle and scapulars.

Gulls. On 4th October, RMA watched it flying low over Weston beach with Black-headed Gulls at dusk – presumably going to roost.

On close examination, the bird was obviously different from any juvenile Black Tern we had seen in the Old World. Despite the fact that *surinamensis* has been recorded in Iceland (Beaman & Madge 1998), it proved difficult to find detailed discussion about the identification of this form at the time, other than that provided by Olsen & Larsson (1995). We did, however, locate a few useful published photographs of *surinamensis*, including in Harrison (1987) and Brinkley & Patteson (1998).



236. Juvenile Black Tern *Chlidonias niger*, showing uniformly dark crown and ear-coverts.



238. Adult 'black terns' in summer plumage; left to right, Black Tern *Chlidonias niger*, American Black Tern *C. n. surinamensis* and White-winged Black Tern *C. leucopterus*. The blackish body colour of *surinamensis* is closer to that of *leucopterus* than to that of *niger*.

J. P. Martin © NHM, Tring

P. M. Anderson © NHM, Tring



Arthur Morris

239. Adult summer American Black Tern *Chlidonias niger surinamensis*, British Columbia, Canada, date unknown. Note the gape colour, as well as the strong contrast between the black body and white underwing.

Examination of skins

On 30th November 1999, we visited the Natural History Museum (NHM) at Tring, and spent the morning examining all the *surinamensis* skins held in the collection, and most/all of those of juvenile *niger*. These comprised ten juvenile *surinamensis* (two collected in August, four in September, two in November and two undated) and 45 juvenile *niger*. This enabled us to confirm many of the differences mentioned by Olsen & Larsson (1995), and we have summarised our findings in table 1 (p. 452). We concluded that Olsen & Larsson is a particularly useful reference for this subspecies pair – we actually added rather little to what is written there.

Although the sample of ten juvenile *surinamensis* examined is modest, we concluded that the Avon bird showed all the features that seem typical of this race. It is perhaps more significant that none of the key features was shown by any individuals of the larger sample of *niger* examined at Tring. The identification of the Weston-super-Mare tern as *surinamensis* has been accepted by both BBRC and BOURC, and this becomes the first British record of this subtle, yet rather distinctive race.

Identification in non-juvenile plumage

Our research for this article concentrated primarily on juvenile birds, but we also looked at skins of adults at the NHM and examined photographs of adult birds. We were surprised how easily separable many *niger* and *surinamensis* are, both in summer and in winter plumage. We were particularly struck by the contrast between the whitish underwing-coverts and jet-black flanks of some summer-plumaged *surinamensis*; quite unlike the typically dusky underwing and dark grey flanks of *niger*. Underwing colour is variable, however, and some *surinamensis* appear (in the photographs we have examined) to have less contrasting, dusky underwings while some *niger* can show white underwings. A tentative feature which may be worth investigating in the field is the colour of the gape in breeding birds: on the few photographs we examined where this feature was visible, the gape of *surinamensis* was bright vermillion, while in *niger* it was pinkish-red. In winter plumage, adult *surinamensis* retains the same head pattern as juvenile birds, though in a few the crown can be darker. They also show (sometimes pale) grey flanks in winter plumage. First-

Bill Schmoker



240. Adult American Black Tern *Chlidonias niger surinamensis*, moulting out of summer plumage, Colorado, USA, August. The moult to winter plumage has produced a rather White-winged Black Tern *C. leucopterus*-like even scatter of white areas on the head and belly and the flanks are still largely unmoulted. This individual shows an eye-catching contrast between the blackish body and white underwing; not all individuals may be as striking as this one, however.

summer *surinamensis* can have white flanks, and perhaps this is normal for this age class. Clearly, there is more to be learnt about the separation of these two races, but we hope that our suggestions will stimulate further study.

Table 2 (p. 453) summarises the main differences between adults of the two forms. It draws extensively on Olsen & Larsson (1995) as well as our study of skins.

Greg Lavaty



241. Second-calendar-year American Black Tern *Chlidonias niger surinamensis*, Texas, USA, June 2005. This bird has the typical 'White-winged Black Tern *C. leucopterus*-like' head pattern. The bird is in active moult, with a mixture of fresh new feathers and old retained ones, conspicuously the two outermost primaries. The white flanks (with the merest hint of grey that would be undetectable in the field) are notable and perhaps age-related. In European breeding species, terns of this age class normally spend the summer in the wintering areas; yet a second-calendar-year *surinamensis* was identified in Ireland in July 2006 (see plate 266 & 267).

Taxonomy and variation

Surinamensis differs from *niger* in all plumages, some aspects of which (for example juvenile and winter head pattern, summer body colour and at least some aspects of moult pattern) more closely resemble *leucopterus* than *niger*. Our interpretation of the BOU's published guidelines for assigning species rank (Helbig *et al.* 2002) leads us to believe that this pair is worthy of serious consideration for treatment as separate species. In our view, they are clearly diagnosable but as their breeding distributions are allopatric there is no easy way to assess potential reproductive isolation. The vocalisations of the two forms may well be worth investigating. Taxonomic deliberations are beyond the

scope of this article, but we broach the subject in the hope of stimulating further study.

There is clearly a degree of variation in the plumage characters of *surinamensis*. For example, we have found photographs of juveniles with darker crowns, which might simply be young juveniles (some tern species can show more dark brown tinges on the head for a short period after fledging than they do subsequently; Olsen & Larsson 1995). Some winter adults examined at NHM, Tring, also showed slightly darker crowns than usual, possibly as a result of wear, and the full extent of variation is perhaps yet to be documented. Clearly, care needs to be taken when faced with a potential *surinamensis* in Europe and a vagrant should, of course, be identified on the full range of features.

Range and status

In North America, *surinamensis* breeds mainly across southern Canada and the northern states of the USA. In the north, it breeds along the Mackenzie River, Northwest Territories, to c. 65°N in the northwest, and east across the prairies to southern Quebec and New Brunswick; while to the south it reaches California's Central Valley in the southwest, and western New York

and Maine in the east. During the breeding season, like its Old World counterpart, it inhabits inland lakes and marshes in both wooded and open environments. It is most numerous in the prairie provinces of the Mid West, but numbers are apparently in serious decline, at least in the east (Gochfeld & Burger 1996). In the west, it winters over pelagic inshore waters of the Eastern Pacific from central Mexico, to central/southern Peru. In the east, the winter range extends from about Panama to Suriname (de Schauensee & Phelps 1978; Howell & Webb 1995; Gochfeld & Burger 1996).

In autumn, migrants moving south along the eastern seaboard of the USA often associate with other terns, including Forster's *Sterna forsteri* and Royal Terns *S. maxima*, species which have also occurred in Britain.

Other European records

Although this represents the first record of *surinamensis* in Britain, this race had occurred in Europe on four previous occasions. The first three records came from Iceland, in 1956, 1957 and 1970, perhaps surprisingly all in June (Pétursson & Þráinsson 1999). The only other previous European record was a juvenile at Sandymount Strand, Co. Dublin, from 3rd to 7th September 1999 (Adriaens 1999); subsequently, another juvenile turned up at Baile en Reannaigh, Smerwick Harbour, Co. Kerry, on 14th September 2003 (Bradshaw 2003), while a first-summer was at Lady's Island Lake/Carnsore Point, Co. Wexford, from 16th July to 1st August 2006 (see plates 266 & 267).

It seems possible that *surinamensis* may have been overlooked in the past. Given that its field characters are becoming more widely known and better understood, further records may perhaps be expected.



Mike Yip

242. Juvenile American Black Tern *Chlidonias niger surinamensis*, Vancouver Island, Canada, August 2004. This bird shows the typical White-winged Black Tern *C. leucopterus*-like head pattern and grey flanks. This individual has a large breast 'peg' but this feature is variable.

Acknowledgments

Our thanks go to Peter Colston and Michel Gosselin for promptly supplying information on the appearance of the *surinamensis* specimens held in the NHM, Tring, and the Canadian Museum of Nature, Ottawa, respectively. NHM, Tring, later kindly allowed us access to the collection and to take photographs of skins. Ron Pittaway provided useful reference literature. Grahame Walbridge and Steve Howell made useful comments on a draft of this paper and the latter kindly provided draft text from the forthcoming *Identification Guide to North American Birds, Part 2* (in prep., with Peter Pyle). Finally, we express our gratitude to Wessex Water for allowing unrestricted access to their facility at Weston-super-Mare, and allowing many visiting birders to enter the site.



Bill Schmoker

243. American Black Terns *Chlidonias niger surinamensis*, two adults and a juvenile (right), Colorado, USA, August. Note the juvenile's head pattern, with the crown obviously paler than the ear-coverts and similar in tone to the upperparts (though still brown-washed in this rather young bird). The strong grey wash is visible on what can be seen of the flanks, while the upperparts have only narrow and indistinct pale fringes. The distinctive crown pattern, rather like that of adult-winter White-winged Black Tern *C. leucopterus*, is already emerging on the two adults, even though the bodies still have much summer-plumaged black feathering.



244. Juvenile Black Tern *Chlidonias n. niger*, Crosby Marine Park, Merseyside, September 2005. Note the black crown and ear-coverts (darker than the mantle), obvious pale fringes to the larger rear scapulars and paler grey rump.

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EDITORIAL COMMENT Colin Bradshaw, Chairman of the British Birds Rarities Committee, said: 'The key features in the identification of this form are well covered here by Rich Andrews and his colleagues. Having been in the fortunate position of finding an American Black Tern in Europe myself, the main features that strike an observer are the uniformity of the upperparts, the grey flanks and the pale head pattern. Once you see these three features you can then get into the detail of why the upperparts are so uniform, and you are home and dry. All the birds so far accepted for Britain and Ireland have been quite striking individuals. What is less clear is whether there are less well-marked individuals of this form which are currently being overlooked.'

Bob McGowan, Chairman of the British Ornithologists' Union Records Committee commented:

'In some regards, it is surprising that *C. n. surinamensis* has only recently been recorded in Britain, as it is not only relatively abundant in North America but also fairly distinctive in plumage.

'American Black Tern has a broad Nearctic distribution and a numerous, albeit declining, population. Autumn flocks, perhaps numbering thousands of birds, are a prelude to southerly movements by inland and Atlantic and Pacific coastal routes. Smaller flocks, of up to 200 birds, have been recorded in the West Indies during September–October. The three occurrences in Iceland, spanning the period 1956–70, proved that trans-Atlantic movement was possible.

'Prompted by the report of an American Black Tern at Dublin, Ireland, just four weeks earlier, R. M. Andrews had already checked literature for identification criteria by the time he noticed the distinctive Black Tern at Weston-super-Mare. Seeing that the crown coloration and concolorous rump "ticked the right boxes" for *surinamensis*, he took detailed notes and further observations were made.

'On circulation, BOURC members were impressed by the well-researched and detailed submission supported by sketches and photographs. A few key plumage features of this bird clearly indicated juvenile *surinamensis* and excluded nominate *niger*: crown coloration, greyish wash to flanks, underwing pattern and colour.



George Reszeter

245. Adult Black Tern *Chlidonias n. niger*, moulting out of summer plumage, Farmoor Reservoir, Oxfordshire, date unknown. The moult of the head is largely complete but the body still shows mainly dark grey summer feathers (creating a different pattern from moulting American Black Tern *C. n. surinamensis*). There is less contrast between the body and the dusky underwing than on most *surinamensis*.

'There was no hesitation in confirming the identification and, as Black Terns were unrecorded in European avicultural collections, the escape likelihood was negligible. Records of other Nearctic birds occurring more or less concurrently with the Black Tern included an Upland Sandpiper *Bartramia longicauda* (Scilly), Spotted Sandpipers *Actitis macularia* (Derbyshire and Devon), a Lesser Yellowlegs *Tringa flavipes* (Cornwall), an exceptional series of White-rumped Sandpipers *Calidris fuscicollis* (Scilly and elsewhere) and, perhaps most significantly, the other American Black Tern in Ireland. All circumstances indicated that this was indeed a vagrant American Black Tern and it was unanimously accepted to Category A.

'The BOURC Taxonomic Sub-committee has American Black Tern flagged as a potential split.'

Looking back

Seventy-five years ago:

'EARLY NESTING OF RED-BACKED SHRIKE IN KENT. I OBSERVE that in [*Brit. Birds*] Vol. 20, p. 150, May 11th is mentioned as the earliest recorded date for a complete clutch of the Red-backed Shrike (*Lanius c. collurio*). It is therefore of interest that I personally took a clutch of five eggs on May 5th, 1922, at Shorncliffe, Kent. The weather was unusually hot

for the time of year. H. T. GOSNELL.' (*Brit. Birds* 25: 102, September 1931)

'REDWING IN SUFFOLK IN JULY.— Mr. Reginald Livesey informs us that he found a Redwing (*Turdus musicus*) dead, but fresh, in some fruit nets at Brundish, Suffolk, on July 14th, 1931. The only other July occurrence of which we have a note was one on the 5th of that month in Cumberland. (*Brit. Birds* 25: 106, September 1931)

A review of the 1950–57 British rarities

*D. I. M. Wallace, Colin Bradshaw and M. J. Rogers,
on behalf of BBRC*



'Free at last!'

D. I. M. Wallace

ABSTRACT A review of records of British rarities in the eight years from 1950 to 1957 has been carried out by a subcommittee of the British Birds Rarities Committee (BBRC). In total, 126 records of 67 of the rarest species and species pairs were reassessed and 71% of these were considered good enough to remain part of the national record. For records that were no longer considered to be acceptable, the counties and surviving observers concerned have been informed. The outcomes of investigations into extraordinary records from the post-war period for six species are noted and other such reviews are continuing.

Introduction

In 1995, the Association of European Rarities Committees (AERC) decided to adopt 1st January 1950 as the standard date by which to differentiate between category A and B records for national lists. In the case of Britain, which had previously for this purpose used 1958 (the year in which the BBRC was formed), compliance with this decision entailed the examination of records of rarities published for the eight years prior to the formation of BBRC (1950–57).

It was soon apparent that the work involved in this review would be considerable and that, if BBRC members took on the task, it would affect the assessment of current records. Consequently,

in 1997, a subcommittee of past BBRC members was formed to undertake the review. The members of this subcommittee had not only the skills necessary for the review but also invaluable past experience and perspectives on the British birding scene. In the early 1950s, responsibility for the provenance of published records had lain with a mix of national, regional and county editors and, particularly where major rarities were concerned, with the editors of *British Birds*. The members of the 1950–57 subcommittee were, at various times, Rob Hume, Tim Sharrock, Keith Vinicombe, Grahame Walbridge and Ian Wallace, in addition to Colin Bradshaw and Mike Rogers, Chairman and Hon. Secretary of BBRC respectively.

Scope of the review

From an initial exchange of views on this situation and what procedures were needed to cope with it, three main issues stood out. The first was the relatively large number of rarities recorded in Britain in the period concerned, while the second was a recognition of the careful attention that had already been paid to British rarity claims published in *BB* by successive editors during 1950–57. The third issue came into focus more slowly – a dawning realisation that much of the original supporting documentation for many of these records was irretrievable.

Taking all the above points into account, we decided that to review all the 1950–57 records might be not only impossible, because of missing data, but also unnecessary, given that many species regarded as rarities in 1950 have since proved to be relatively regular visitors to Britain, with well-defined patterns of occurrence (e.g. BOU 1971). All members of the subcommittee independently reviewed the 1950–57 records listed in Naylor (1996) and formulated opinions on the scope of the review. A series of options was then discussed at the BBRC AGM in 1998. At that meeting, it was agreed that the subcommittee would not review the total number of records (about 1,100) of all species classed as rarities in 1958 but would concentrate primarily on those species that had occurred fewer than 100 times by 1997. In addition, each member of the subcommittee produced a short-list of records which did not fulfil the above criteria but simply ‘looked wrong’. The most awkward of these were termed ‘sore thumb’ records and were also reviewed.

Execution of the review

MJR retrieved all published accounts of 1950–57 rarities, together with county data where available and, occasionally, even resubmitted field notes and sketches. In most cases, however, we had to work from the published account alone as no further details could be obtained. The *BB* archives were not transferred with the sale of the magazine in the 1960s and they could not be found. The next stage was to assess the existing documentation and, in cases where it was deemed inadequate, to attempt to locate any further information that might be available. For example, a substantial number of records related to birds which had died and been preserved subsequently as museum speci-

mens. In most such cases, the specimens were photographed and images added to the file. In a few situations where this was not possible, a member of BBRC or relevant museum staff examined the specimen and provided a description for the file, even if, as in one case, the specimen was now a skeleton only. Other details came from various County Recorders, who searched their archives. Once the files were as complete as possible, the records were assembled into batches for circulation among subcommittee members. Each member voted on whether or not each record should continue to be acceptable.

Over the entire review, the process of record assessment was less straightforward than for modern records, in that we brought modern-day identification criteria to old claims for which the documentation could be well below standards that would prove acceptable today. Initially, therefore, we identified only those few records where present knowledge demonstrated clearly that a genuine mistake had been made. Two examples of this were a Greater Yellowlegs *Tringa melanoleuca* that had a white ‘V’ on its back and a Collared Pratincole *Glareola pratincola* that landed on water and swam (none of the international experts contacted had ever seen or heard of a pratincole swimming in deep water). Inevitably, as the review continued, there was debate on the quality of the written evidence of some records but nonetheless recirculations were rare. There was usually a ready and welcome unanimity on the revised judgements and we were relieved and pleased to find no evidence of falsification in any reviewed claim. Most non-acceptances stemmed from the unfortunate brevity of published accounts or the lack of features that we now know to be crucial diagnostic characters.

In those cases where a record was deemed no longer acceptable and surviving observers were found, CB wrote to them personally and explained the reasons behind the decision, inviting them to withdraw the record. One asked for his original notes back so that he could reassess his claim – sadly those originals had been lost – and otherwise only two observers declined to withdraw their claims. At the end of the review process, once the few recirculations were completed, MJR and CB reviewed all the judgements and annotated the relevant entries in Naylor (1996) with the revised decisions.

Results of the 'under 100' review

For the 65 species and two species pairs concerned (those with fewer than 100 records prior to 1997), the historical register for all time up to 1957, as listed by Naylor (1996), contained 829 records. Of these, 206 had been reviewed earlier and rejected, again as noted by Naylor (1996). This left a balance of 623; of these, 126 had been claimed during 1950–57 and all were reviewed by the subcommittee. Following this review, 89 of the 126 records continue to be acceptable and 37 are now not acceptable. The overall rate of rejection was thus 29%, higher than the 21% evident from the prior scattered reviews (see again Naylor 1996). We hope that the reduced rate of acceptance will be taken as evidence for our careful application of modern disciplines and *not* as a slur on earlier observers' competence or attitude. Many of the observers concerned were responsible for major advances in the development of field identification and the overall record of vagrancy. They were then at the cutting edge and it would be wholly inappropriate for us now to downplay or undermine their contribution to rarity recording.

For the 65 species and two species pairs reviewed in the batch circulations, there were between one and seven records each. For 38 species (and both species pairs), all the records were retained; for 20 species, just one record was removed (or demoted to species pair); for four species, two records were removed, and for just three species three records were removed. All changes in record status have already been notified to county recorders by MJR but, for the sake of clarity and to assist the revision of BBRC statistics, they are listed in Appendix 1.

The merits of examining other pre-1958 records

We feel that a further effort to sanitise the history of other species, those that have been BBRC subjects since 1958, would smack of mere bureaucracy. Interpolation of the final rejection rate of the 'under 100' species indicates that we would be unlikely to change the overall number of accepted records in this other, larger group by much more than 1–2% of the total. Such a loss of records would be insufficient to disturb the long-established and often annually repeated patterns of occurrence. Any complete review would have to unearth nearly 1,000 claims, beginning with 77 Red-breasted Flycatchers *Ficedula parva*, and we see no justifica-

tion for the work involved.

We did, however, in addition to our main subjects, reappraise several 'sore thumbs.' These included a putative White-tailed Eagle *Haliaeetus albicilla* which broke into a chicken-run in a garden and stole a chicken, and the only late December record of Tawny Pipit *Anthus campestris*. Altogether, nine records of six species were considered not acceptable and details of these are given in Appendix 2. More serious and as yet unresolved was the unease felt by many on several extraordinary or unprecedented records in both 'under-' and 'over-100' categories in the immediate post-war period. Some of these were considered during the procedural stage of the review but, because they fell outside our time frame, they were ultimately not assessed. A good example is the 1946 Moustached Warbler *Acrocephalus melanopogon* breeding record. Detailed arguments for its deletion from the British List have now been accepted by BOURC (see pp. 465–478).

Other particularly noteworthy revisions occurred in the cases of two former 'firsts': a frigatebird formerly accepted as Magnificent *Fregata magnificens* but upon separate review accepted as the first Ascension Frigatebird *F. aquila* for Britain (Walbridge *et al.* 2003) and the 'Fair Isle sandpiper' of 1956 (which until recently stood as Britain's first Western Sandpiper *Calidris mauri*, and which is still under investigation; Garner 2005, Prowse 2006, Walsh 2006).

Acknowledgments

For helping them in their task, MJR and the subcommittee would like to thank all County Recorders who helped with the records involved; staff of the Hancock Museum, the Natural History Museum, Tring, and the Royal Scottish Museums, particularly Bob McGowan (RSM), for providing photographs of numerous specimens; and the following individuals: Belén Calvo, Pete Colston, Joanne Cooper, James Ferguson-Lees, Martin Garner, Andy Greenwood, Ricard Güttierrez, Paul Harvey, Peter Hayman, Bob Hudson, Alan Knox, Ian Lewington, Tony Marshall, Howard Medhurst, James Monk, Christopher Perrins, Alan Prowse, Graham Rees, Bob Scott, Andrew Self, Deryk Shaw, Eric Simms, Brian Small, Gunter de Smedt, Tadeusz Stawarczyk and Steve Votier.

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Appendix 1. 1950–57 records no longer considered acceptable.

Red-breasted Goose *Branta ruficollis*, Beaulieu Firth, Inverness-shire, 20th January 1957, probably since late September 1956

Harlequin Duck *Histrionicus histrionicus*, Laggan River, Islay, Argyll, male, shot, 12th November 1954

North Atlantic Little Shearwater *Puffinus baroli*, off Aberdaron, Caernarfon, 7th May 1951

American Bittern *Botaurus lentiginosus*, found dead, Stratton, Cornwall, September 1953

Squacco Heron *Ardeola ralloides*, Brighton, East Sussex, 29th April 1951

Great White Egret *Ardea alba*, Ridge, Wareham, Dorset, 5th August 1951

Black Stork *Ciconia nigra*, Houghmond Hill, Shrewsbury, Shropshire, 20th May 1956;
Canterbury/Dover area, Kent, September–November 1957

Little Crake *Porzana parva*, Lundy, Devon, adult male, 12th–14th September 1952; Marton Mere, Lancashire, immature female, 31st May 1955; Fenwick, Northumberland, adult female, 29th–30th September 1956

Baillon's Crake *Porzana pusilla*, Abberton Reservoir, Essex, 13th June 1953

Collared Pratincole *Glareola pratincola*, Stanpit Marsh, Hampshire [now Dorset], immature, 13th September 1951

Black-winged Pratincole *Glareola nordmanni*, Steart, Bridgewater Bay, Somerset, 15th June 1955
(accepted only as pratincole sp.)

Western Sandpiper *Calidris mauri*, Fair Isle, Shetland, trapped, 28th May to 3rd June 1956

Least Sandpiper *Calidris minutilla*, Lundy, Devon, 24th–26th September 1957

Baird's Sandpiper *Calidris bairdii*, Billinge Green, Northwick, Cheshire, 27th–29th May 1955; same, Marston, Cheshire, to 5th June 1955

Marsh Sandpiper *Tringa stagnatilis*, Thorney, West Sussex, 22nd April 1951

Greater Yellowlegs *Tringa melanoleuca*, Boddam Voe, Shetland, 26th–27th May 1953

Laughing Gull *Larus atricilla*, Abberton Reservoir, Essex, adult, 20th December 1957

Sooty Tern *Onychoprion fuscata*, Porthkidney, Leland, Cornwall, 31st July 1951; Isbister, Rendall, Orkney, 22nd April 1954

Eurasian Scops Owl *Otus scops*, Tregonning Hill, Helston, Cornwall, 16th September 1952;
Kilkhampston Wood, Bude, Cornwall, 14th October 1953; near Kendal, Cumbria, 18th December 1956

Pechora Pipit *Anthus gustavi*, Fair Isle, Shetland, 2nd October 1951

Black-eared Wheatear *Oenanthe hispanica*, Regent's Park, London, male, 23rd April 1951; Fair Isle, Shetland, first-year male, 8th–13th November 1951; Farlington Marshes, Hampshire, 18th September 1954

Desert Wheatear *Oenanthe deserti*, Marazion, Cornwall, female, 29th August 1950

White's Thrush *Zoothera dauma*, Foulmartlaw, Belsay, Northumberland, two, 26th April 1952

American Robin *Turdus migratorius*, Brampton, Cumbria, 2nd–6th March 1955; Braunton Burrows, Devon, 29th October to 7th November 1955

Lanceolated Warbler *Locustella lanceolata*, Fair Isle, Shetland, 4th May 1953

Moustached Warbler *Acrocephalus melanopogon*, Eling Great Marsh, Hampshire, two, 13th August 1951; Cliffe, Kent, 14th April 1952

Pine Grosbeak *Pinicola enucleator*, Charing, Kent, adult male, 7th April 1955

Appendix 2. Other species with records reassessed during the 1950–57 review and now considered unacceptable.

Magnificent Frigatebird *Fregata magnificens*, Tiree, Argyll, immature female, 9th July 1953

(reidentified and accepted as first British record of Ascension Frigatebird *F. aquila*)

White-tailed Eagle *Haliaeetus albicilla*, Biddenham, Bedfordshire, immature, 1st May 1951

Ivory Gull *Pagophila eburnea*, near Giltar Point, Pembrokeshire, adult, 24th August 1950; Cuckmere Valley, East Sussex, adult, 19th November 1954

Tawny Pipit *Anthus campestris*, Tutbury, Staffordshire, 29th December 1953

*Olivaceous Warbler *Hippolais pallida/opaca*, Skokholm, Pembrokeshire, adult, trapped, 23rd September to 3rd October 1951; Portland Bill, Dorset, trapped, 16th August 1956

†Little Bunting *Emberiza pusilla*, Beddington Sewage-farm, Surrey, one from 31st March to 21st April, another 3rd April, 1956

* Both were rejected in a previous Olivaceous Warbler review undertaken by both BBRC and BOURC, but are reported here for completeness.

† One Little Bunting remains acceptable, from 31st March to 3rd April.

Rarities Committee news

BBRC seeks two new members

BBRC is seeking to recruit two new members to join the Committee, to replace Paul Harvey and John Martin who are retiring after many years of outstanding service. The criteria for nominations remain unchanged from previous years, and include:

- a widely acknowledged expertise in identification;
- proven reliability in the field;
- a track record of high-quality rarity submissions;
- experience of record assessment;
- the capacity to work quickly and efficiently;
- easy access to and knowledge of IT; and
- regional credibility.

In 2005, we elected two new members, both of whom were

BBRC nominations. Consequently, we do not intend to have BBRC nominations this year and we would encourage nominations from as wide a base as possible; we are interested in any relevant skills that you can bring to the Committee. Nor are we particularly tied to geographical replacements. The two retiring members are from the Northern Isles and southwest England; while the volume of records from the former region is such that we would particularly encourage nominations from this area, we are already well represented in the southwest and so would welcome nominations from anywhere in Great Britain.

BBRC membership brings with it insight into identifica-

tion and record assessment and is a unique experience for anyone with interest and experience of rare birds in a British context. It is always challenging and never dull.

Nominations should be sent by e-mail to Colin Bradshaw (drcolin.bradshaw@btinternet.com), before 1st December 2006, with details of a proposer and seconder, and the written agreement of the nominee. After this date, a voting slip and list of candidates with relevant details will be sent to all County Recorders and bird-observatory wardens.



The British Birds Rarities Committee is sponsored by Carl Zeiss Ltd.

Time to get rid of the Moustache:

a review of British records of Moustached Warbler

Tim Melling



The Cambridgeshire warblers

Alan Harris

ABSTRACT This paper presents a recent review of one of the most extraordinary 'firsts' for Britain, that of Moustached Warbler *Acrocephalus melanopogon*. Once an old specimen record from 1915 was dismissed as being part of the 'Hastings Rarities' affair, the record of a breeding pair in Cambridgeshire in 1946 became the first for Britain, and this record has stood as such for over 30 years. The Cambridgeshire birds were seen by many of the leading British ornithologists of the day, yet the publication of original field sketches (in *British Birds* in 2000) prompted fresh doubts about the identification. All material relating to the record was reviewed thoroughly in 2005, and BOURC members agreed unanimously that it was no longer acceptable as a first for Britain. Subsequently, a review of the one remaining British record, a bird trapped at Wendover, Buckinghamshire, in July 1965, showed that the evidence in support of this record was also not sufficient for it to stand as a first for Britain. Consequently, Moustached Warbler has now been removed from the British List.

I can vividly remember buying a copy of *Birds New to Britain and Ireland* (Sharrock & Grant 1982), in the year it was published. The very first account in this mouthwatering book was that of the breeding Moustached Warblers *Acrocephalus melanopogon* in Cambridgeshire, in 1946. Although this seemed an unlikely record, the list of observers read like a 'Who's Who' of British ornithology of the time, and the write-up seemed thorough and plausible. The final editorial comment gave a ringing endorsement by stating 'Despite the eminence of the observers involved, this extraordinary record of breeding seems doomed to be disbelieved by those who have not examined the evidence, but is completely accepted by those who have' (Sharrock & Grant 1982). Despite this, I still had a few personal doubts about the record, based largely on the sheer improbability of these short-distance migrants breeding in Britain.

Seventeen years after reading the account for

the first time, I became Secretary of the BOURC and custodian of all the files. The Cambridgeshire Moustached Warbler file was one of the first I delved into, expecting to have my scepticism overturned just like those who had gone before me. However, instead of my scepticism evaporating, I found myself puzzled by conflicting descriptions and unanswered questions. Another thing that struck me when I studied the whole file was that the original account published in *British Birds* (Hinde & Thom 1947, repeated subsequently in Sharrock & Grant 1982) had rather cherry-picked the pro-Moustached features. A number of the field descriptions contained features that were definitely suggestive of Sedge Warbler *A. schoenobaenus*, but these were omitted from the *BB* write-up. Moreover, I discovered that there had been doubters among those who had previously reviewed the record but they had been swayed by the eminence of the observers involved.

It is worth recording that there were also doubters who had not been swayed. Col. Richard Meinertzhagen recorded his scepticism at the time at a meeting of the British Ornithologists' Club in November 1950 (Meinertzhagen 1950). Meinertzhagen said: 'There is no character in this exhaustive field record which does not equally apply to the Sedge Warbler.' He said that Moustached Warbler could be identified with certainty only by the length of the first primary and that the record should not even be accepted as a sight record. He exhibited five specimens of each species showing that the 'dark crown and more prominent eye-stripe is not an invariable specific character'. David Bannerman (1954) endorsed Meinertzhagen's view, and included the species in his multi-volume work on British birds only because it was accepted by the BOU.

Courtesy of the Trustees of the National Museums of Scotland



246. Plate showing Moustached *Acrocephalus melanopogon* (top) and Sedge Warbler *A. schoenobaenus* from *A History of the Birds of Europe* (Dresser 1871–1896).

The Cambridgeshire Moustached Warblers

Two birds were discovered on 3rd August 1946, near Cambridge. They were in an area of scrub on the edge of a large reedbed in a flooded railway ballast pit, and they were watched daily from then until 20th August, the date on which the last sighting was made. The birds were breeding and raised three chicks during this period. The birds were seen by many eminent and respected ornithologists of the time, most of whom submitted a description. Some of the submitted descriptions were more detailed than others, in particular those by Dr R. W. Butler, A. Darlington, R. A. Hinde and A. S. Thom, all of whom watched the birds on several occasions (Thom watched the birds on 12 of the 18 days that they were seen). All observers were familiar with Sedge Warbler and were convinced that the Cambridgeshire birds were not that species, noting particularly the darker crown, whiter and square-ended supercilium, well-marked eye-stripe, chestnut upperparts and reddish-buff flanks. On the face of it, these were all classic field characters for separating Moustached from Sedge Warbler. Moreover, Sedge Warblers were a common breeding bird at this site, and were seen alongside for comparison. It is clear that these birds certainly did not look like typical Sedge Warblers.

Skins of Sedge and Moustached Warblers were taken into the field, as was the appropriate volume of H. E. Dresser's *A History of the Birds of Europe*. This is surprising in itself as this nineteenth-century book is not only extremely valuable, but is even larger than a volume of *BWP*! The illustration it contains cannot have been particularly helpful as it shows the species as if viewed from below (plate 246). For a fuller background to the record, see Hinde & Thom (1947) or Sharrock & Grant (1982).

Previous assessments of the Cambridgeshire record, and other Moustached Warbler records

Bernard Tucker was the first person to assess this record, in his capacity as editor of *British Birds* (in the days prior to the establishment of the British Birds Rarities Committee). Tucker was on holiday in Scotland at the time the birds were found, and did not see them in the field, but analysed the record in detail shortly afterwards. Tucker's view was that 'although Dr Butler's account stood somewhat apart in being distinctly more suggestive of Sedge Warblers

than any of the others "the evidence as a whole, and even the two or three fullest and most careful descriptions taken individually, seems to make the conclusion almost inescapable that the birds were Moustached Warblers"' (Hinde & Thom 1947).

The record was assessed by the BOU List Committee and was added to the British List as a breeding record (*Ibis* 1950) with a caveat that this was a sight-only record. The record was not fully assessed by BOURC until 1962, 16 years after the event. This was because, at the time of the occurrence, Moustached Warbler was already on the British List, by virtue of a male said to have been obtained at St Leonards-on-Sea, East Sussex, on 12th April 1915. This record was rejected as one of the 'Hastings Rarities' in 1962; consequently, the 1946 Cambridgeshire record became the next potential first, and was then assessed fully by BOURC for the first time. The record was accepted in 1962, but was one of a number of records referred back by BOU Council to the Records Committee for further consideration (BOU 1968). In 1970, the record was assessed by BOURC for a second time, and was then accepted unanimously and the details were published in *Ibis* (BOU 1971). By 1970, the Records Committee contained just one of the original members of the 1962 Committee.

Colin Bibby borrowed the file from BOURC in 1982 to help him to compile an article for *British Birds* on this species (Bibby 1982). He too studied all of the accounts and endorsed the record.

Keith Vinicombe wrote an article in *Bird-watch* in April 2002 that cast doubt on this record (Vinicombe 2002). He pointed out that the wording in the original *BB* article describing the birds (Hinde & Thom 1947) seemed less than totally confident, the then editor of *British Birds* having written there that 'the evidence as a whole... seems to make the conclusion *almost* [KV's italics] inescapable that the birds were Moustached Warblers'. The word 'almost' implies that it is less than 100% certain. Furthermore, Ian Wallace wrote to BOURC in August 2003, reluctantly suggesting the record should be reviewed as he felt that there were too many pro-Sedge Warbler features in the published illustrations. He also helpfully provided a critique of all the illustrations that had been reproduced in the *BB* review. Interestingly, Bernard Tucker was also not convinced by the illustrations, and stated: 'The coloured drawings

by Ennion and Butler are unfortunately disappointing as evidence. Thom's of the male bird is more convincing' (quoted from Bernard Tucker's unpublished assessment of the record, held in BOURC files).

There have been four subsequent claims of Moustached Warbler in Britain: a sight record of two birds at Eling Great Marsh, Hampshire, on 13th August 1951; a sight record at Cliffe, Kent, on 14th April 1952; an adult trapped at Wendover, Buckinghamshire, on 31st July 1965; and a sight record at Angmering, West Sussex, on 18th August 1979. The Hampshire and Kent records were reviewed by a subcommittee of BBRC, set up in 1997 to review records of British rarities during 1950–57 (see pp. 460–464). Both records were described insufficiently to establish the identification conclusively, both described features that were inconsistent with Moustached Warbler, and both records were rejected. Subsequently, BBRC reviewed the remaining post-1950 British records (Bradshaw 2000). The West Sussex record was rejected because the description did not rule out completely a worn adult Sedge Warbler. The one remaining record, the adult trapped at Wendover, was upheld. Although the Cambridgeshire breeding record was before the BBRC period, they included it in their review for completeness, and endorsed that record too.

The 2005 BOURC review

Original field sketches of the Cambridgeshire birds (by R. W. Butler, Eric Ennion and A. S. Thom) were published for the first time in Bradshaw (2000). [It is worth noting here that some of the artwork published in the BBRC review was attributed wrongly. Figs. 1–4 were

attributed to A. S. Thom but were actually by R. W. Butler.] The ensuing doubts that were raised by their publication, together with the advances in our knowledge of Moustached Warbler identification since 1946, formed a substantial body of new evidence relating to the Cambridgeshire birds and, as a consequence, BOURC undertook to review the record once more.

The file contained 13 original descriptions, including accounts from such outstanding ornithologists as Edward Armstrong, Eric Ennion and James Fisher. W. B. Alexander was also among those who saw the birds, but he didn't see them well enough to be able to submit a description. In addition to the written descriptions, three observers (Butler, Ennion and Thom) also submitted illustrations. The file also contained a thorough analysis of the evidence by Bernard Tucker, prior to the publication of the record in *British Birds*. Tucker was fully aware of the unlikelihood of this record.

The following review concentrates on the written descriptions and accounts rather than the illustrations. Bernard Tucker thought that the illustrations were disappointing as evidence (see above) and BOURC felt that the accuracy of the illustrations, particularly those by non-artists, could not be relied upon. Eric Ennion was an artist, but submitted only pencil sketches. His coloured painting was submitted later to accompany the write-up in *BB* (and published as a frontispiece to Vol. 41 of *British Birds*; see also *Brit. Birds* 41: 387).

Back in 1946, observers were unaware of the significance of the primary projection, so we would not expect the descriptions to make mention of it. However, given the detailed scrutiny these birds were subjected to, we would



247. Skin of dark Sedge Warbler *Acrocephalus schoenobaenus*, collected in Sussex in May 1995, an individual which was extremely similar to series of Moustached Warbler *A. melanopogon* specimens in showing chestnut upperparts, blackish crown and white supercilia.

expect most plumage and bare-part features to be recorded. The key features that were used to identify these birds (colour of crown and upperparts, shape and colour of supercilium, flank colour) are all 'continuous' rather than absolute or discrete characters, which are within the range of variation of Sedge Warbler. There cannot be many birdwatchers who have not given a Sedge Warbler a second glance because it showed a blackish crown, white supercilium and chestnut upperparts. As part of the 2005 review, BOURC member Bob McGowan studied a series of skins in the collections of the National Museums of Scotland and the Natural History Museum (Tring), and he noted that, on visual inspection, about one in 20 Sedge Warbler skins were virtually indistinguishable from Moustached Warbler in showing chestnut upperparts, blackish crown and white supercilia. One Sedge Warbler specimen also had a rufous wash along the flanks identical to that of Moustached Warbler (plate 247). There was also one skin that had had its label name altered, then altered back again, showing that even in the hand this pair can be confused (plate 248). Indeed, a number of published photographs of Moustached Warblers have actually been of Sedge Warblers (e.g. Hammond & Everett 1980, Keith & Gooders 1980, Bibby 1982).

Analysis of the descriptions

It is perhaps a little surprising that none of the observers remarked on the characteristic shape of Moustached Warbler – the dumpy body, and

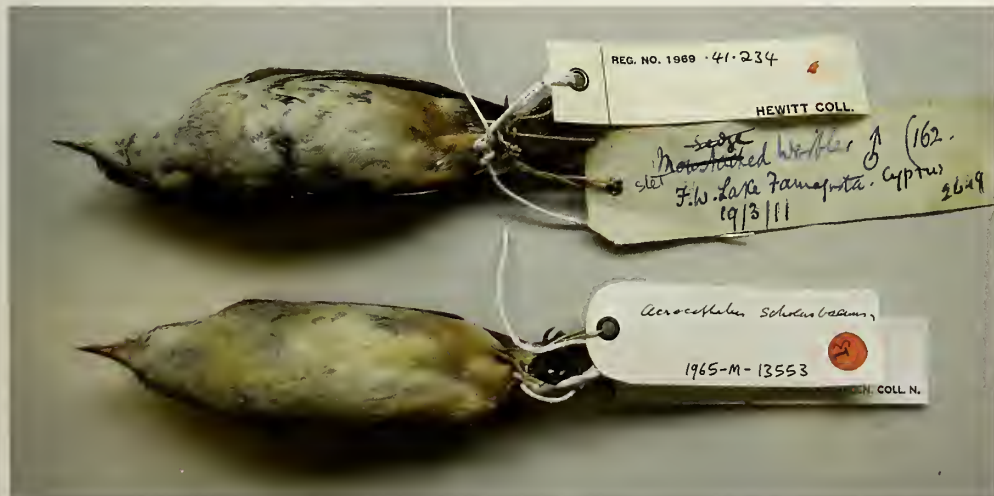
shorter wings and tail (compared with Sedge). Size and shape features apart, there are two field characters that appear to be unambiguous for separating Moustached from Sedge Warbler. These are (i) dark legs and (ii) the presence of a moustachial stripe.

Leg colour

The leg colour of Moustached Warbler at all ages is dark and this is an important field character to separate Moustached from Sedge, which has pale legs. However, of the seven observers who mentioned leg colour in their description, all were unanimous that both the adults and young birds had pale legs. Adult leg colour was described variously as 'ochre to mid hair brown' (Ennion), 'pale buff' (Thom), 'light grey-brown' (Butler, Hinde), 'light/pale fawn' (Rose, Thorpe) and 'buffish/dirty straw-coloured' (Darlington). Thom even described the juvenile leg-colour as 'off-white', while Darlington described it as 'nearly white'. No observers described the leg colour of any of the five birds as dark.

Moustache

The dark moustache of Moustached Warbler extends for a short distance from the bill along the lower edge of the ear-coverts. It is a diagnostic feature of this species, but is often difficult to observe. However, given the close scrutiny that these birds were under (they were watched for many hours, at close range), some observers would surely have noted the mous-



248. Skins of Moustached *Acrocephalus melanopogon* (top) and Sedge Warbler *A. schoenobaenus*. As is apparent in the photograph, the Moustached, collected in Cyprus in March 1911, has had its label changed twice, evidence of the problems of identification; this bird is less rufous below than a typical Sedge Warbler (below).

tache had it been present. Comments on the presence or otherwise of a moustache are a little confused, but observers were aware that one should be present, and so looked for it. Prof. Raven, who was present at the site for only 40 minutes, mentioned a blackish moustache, although he commented on its contrast with the white eye-stripe [sic] and white throat, so he was almost certainly referring to the dark ear-coverts. Ennion and Butler both thought that they might have seen some indication of a moustache, although Butler watched the birds on three subsequent occasions and became convinced that there was definitely no moustache. J. A. Gibb was adamant that the birds did not show a moustachial streak and suggested that, on the basis of his experience in Malta and Cambridgeshire, the illustration in Bannerman (1939) should be amended to eliminate all suggestion of a moustache.

Bill

The bill of Moustached Warbler is long, slender and dark, with some pale at the base of the lower mandible. Only Raven suggested that the bill appeared more slender than that of Sedge Warbler. All other observers commented merely on the colour, which ranged in the adults from 'dark brown' (Thom) to dark ochreous horn, with pale ochre base and a darker tip (Ennion). The bill colour of the juveniles was clearly paler and descriptions varied from 'pale buff' (Darlington), or 'yellow' (Hinde) to 'off-white' (Thom).

Crown

All observers were unanimous that the birds had blacker crowns than Sedge Warbler. The nominate race of Moustached Warbler usually shows a uniformly black crown under field conditions but some intermixed brown feathering is apparent in the hand (this pattern applies to both juveniles and adults). Some of the descriptions, however, suggest a more Sedge Warbler-like crown pattern. Descriptions of the crown colour include: 'nearly/almost black' (Darlington, Butler, Ennion), 'very dark black/brown' (Hinde), 'very dark' (Raven, Fisher, Thom), 'dark' (Mills), 'dark blackish-brown' (Rose), and 'much darker than Sedge Warbler' (Armstrong/Cott). Thorpe is the only observer who uses unqualified black in the crown colour when he says 'edges black with faint brown marks'. Most observers also

describe paler brown streaks in the crown, a feature that is also shown in the paintings. Darlington referred to two deep-buff lines either side of the crown centre. Hinde also referred to dark brown lines on either side of the crown. Butler counted three narrow chestnut bands separated by three slightly wider, darker brown (not black) bands. Ennion also referred to a paler central crown-stripe with 'much confused and finer laterals'.

The juvenile crowns appeared rather more Sedge Warbler-like. Darlington described the juveniles as having rich brown crowns, with two deep-buff lines, much broken up from the base of the bill, through the crown. Both Thom and Hinde also described the juveniles as being brown-crowned (Thom: 'warm brown', Hinde: 'very dark brown'). No observers used the word 'black' to describe any part of the juvenile crown colour.

Moustached Warblers should have black crown feathers throughout, with some paler feather edging creating slight streaks in fresh plumage. Moreover, the crown should appear more uniformly black by late summer as these edges wear off. According to BWP, juveniles should have even blacker crowns than adults. This is completely at odds with the descriptions of the Cambridgeshire juveniles. It is worth noting, however, that the eastern race of Moustached Warbler *A. m. mimica* typically has more brown streaking in the crown than nominate *melanopogon*.

Supercilium

All observers commented on the whiter and more prominent supercilium than Sedge Warbler's. All concurred that the (presumed) male had a supercilium that was off-white in front of the eye and pure white behind the eye. The (presumed) female had a supercilium that was less white than the male's. Darlington described the female's supercilium colour as 'pale buff throughout' in dull light, but said that it appeared whiter in bright light. Thom concurred that it was very pale buff. The juveniles clearly had less obviously white supercilia. Darlington described them as 'more yellowish in tone and narrower', whereas Thom described them as 'yellowish-buff'. Moustached Warbler can certainly show off-white supercilia but yellow is a colour that should not appear anywhere in the plumage, particularly on the supercilium.

Upperparts

Moustached Warbler typically has chestnut upperparts with a rump that is usually concolorous but can be fractionally brighter than the mantle. Sedge Warbler usually shows an obvious contrast between the browner mantle and brighter, rufous rump. The detailed descriptions of Darlington, Hinde, Thom, Butler and Ennion all describe the rump as being brighter or more rufous than the comparatively colder upperparts. The colour illustrations by Butler and Thom also show this contrastingly rufous rump. Thom also described the adult flight feathers as having yellow-buff margins, and those of the juveniles as having yellow margins – as noted above, yellow should not appear in the plumage of Moustached Warbler.

Underparts

The rufous wash along the flanks shown by the Cambridgeshire birds is a pro-Moustached feature. However, a specimen of Sedge Warbler at the NHM, Tring, shows rufous flank coloration that is indistinguishable from that of Moustached (see plate 247) so it is not a diagnostic feature. In Moustached Warbler, the rufous usually, but not always, extends from the nape across the breast-sides then down the flanks, which accentuates the white throat. For the Cambridgeshire birds, the rufous flanks were also unequivocally described only in the male. Darlington, Thom and Fisher referred to a rosy tinge on the flanks, but only in the male. According to Darlington, the female showed no hint of this rosy tinge, but was suffused light brown. Butler described the flanks as tawny (i.e. yellowish-brown) implying that the adult birds were the same. Thorpe also described the flanks as yellowish-brown, without specifying which bird he was referring to. Yet again, there is reference to yellow in the plumage, which is undeniably a strongly pro-Sedge feature.

Juvenile gorgets

In the 1970 BOURC assessment, one member made the point that if they had been Sedge Warblers, the characteristic gorget of spots on the juveniles would have been seen. In fact, only three observers saw the juveniles well enough to provide a description. Furthermore, BWP states that breast spotting was almost, or completely absent in 20% of 40 juvenile Sedge Warblers examined. It would therefore appear that the absence of juvenile

breast spotting is not a reliable feature.

Size

Descriptions of size were many and varied; Darlington and Fisher described the birds as smaller than Sedge Warbler, Raven described them as slimmer than Sedge Warbler, Hinde was adamant that they were identical in size to Sedge Warbler in direct comparison, yet Ennion thought that they were a trifle larger. To confuse the picture further, Thom said that they were the size of Reed Warbler *A. scirpaceus*. There is overlap and racial variation in size between Sedge and Moustached Warblers. Sedge Warblers are comparatively longer-winged and longer-tailed than Moustached Warblers but there is overlap in overall size. However, the shorter wings can make the tail *appear* longer in Moustached. In western populations (nominate race), Moustached Warblers are usually 10–15% lighter than Sedge, although eastern *mimica* tend to be slightly larger than Sedge.

Calls

There was general agreement that the calls did not sound like those of Sedge Warbler, although C. C. Rose described the call as a churr like that of a Sedge Warbler. Song was not heard, but the two described calls were a churr (variously described as 'trrrt' or 't-rrk'), with an alarm call 'tchit' or 't-chik'. These calls were sometimes repeated in rapid succession. Ennion suggested that the churr notes were softer than those given by Sedge Warbler, but that the scold note was deeper, more like that of Reed Warbler. Sedge Warblers give a soft churr note (e.g. Jonsson 1992, Baker 1997) and a short alarm call 'chek' (Jonsson) or 'tuc' (Baker) so the calls are not that different from published descriptions of Sedge Warbler calls. There is certainly nothing in the written descriptions of calls that would conclusively rule out Sedge Warbler. This is also the conclusion that Tucker drew in his analysis.

Previous experience

Gibb was the only observer with previous experience of Moustached Warbler. He had found a vagrant on Malta two years previously (in 1944), the second record for that island (Gibb 1946, 1951). He had identified this bird by its song, describing it thus: 'sweeter and not so loud as Sedge Warbler, it was delivered jerkily with a slight pause between each phrase.' He noted that the bird was singing in a low fig *Ficus*

tree at the edge of a field of *sulla* (a fodder crop that grows to about 1.3 m) on 24th March 1944. In *BWP*, Gibb's is the only referenced example of a bird singing away from its wetland habitat. Furthermore, Gibb used the term 'identified' to report the Moustached Warbler, whereas he used 'positively identified' in the same article to report a vagrant Melodious Warbler *Hippolais polyglotta* on Malta (Gibb 1951). He also used the term 'bird seen' to report other unusual species. The differences in terminology might imply that he was less positive about the Moustached Warbler, and the unusual habitat also makes this record questionable. The description of the song is also not particularly convincing, omitting any mention of the characteristic Common Nightingale *Luscinia megarhynchos*-like notes at the start. In his written description, Gibb claimed that he identified the Cambridgeshire warblers on three salient features that he had noted on the bird on Malta, namely the black crown, white supercilium and white throat; however, he made no mention of these features in the original publications (Gibb 1946, 1951). These anomalies must surely call into question Gibb's record of Moustached Warbler on Malta, and certainly suggest that his 'experience' with the species was of limited value with respect to the Cambridgeshire record.

Tucker's analysis

Bernard Tucker, the author of the Moustached Warbler section in *The Handbook*, made an extremely thorough critique of the descriptions and illustrations and was certainly aware of discrepancies within them. He was clearly worried that observers did not seem to be struck by the darker appearance that would be expected in Moustached Warbler. He was also worried by Butler's description, which he conceded 'would definitely tell against it if there were not so much other evidence that seems to contradict it in some respects.' The things that worried Tucker most were that Butler didn't make so much of the dark crown, and described the mantle as brown and the rump and tail-coverts as tawny (i.e. yellowish-brown), which is wrong for Moustached. (An important aside here is the use of the adjective 'tawny'. To many bird-watchers, the word is most often associated with the Tawny Owl *Strix aluco*, yet this species is not tawny, i.e. yellowish-brown. Butler may have used 'tawny' thinking that it described the rufous colour of Tawny Owl. See also discussion

of underparts, above.) It is worth remembering that Butler visited the birds on four occasions and submitted one of the more detailed descriptions. The thing that seemed to swing Tucker's opinion towards Moustached was the fact that both Hinde and Butler had observed the birds tail-cocking. At this time, Tucker was not aware that tail-cocking had ever been recorded in Sedge Warbler, yet he knew that it was a characteristic habit of Moustached Warbler. Hinde stated that: 'on several occasions they cocked their tail to an almost vertical position, especially when excited.' Butler said: 'the presumed hen, when much agitated because I was near her young, darted into the brambles [*Rubus fruticosus* agg.] near my feet and in flitting from twig to twig flicked up her tail at each landing almost vertically.' So it appears that the birds only tail-cocked when they were agitated, which is exactly what Sedge Warblers do (e.g. Shirihihi *et al.* 1996, Beaman & Madge 1998, Vinicombe 2002).

The greatest misgiving that Tucker had about the record, however, concerned the habitat. Tucker said: 'The weakest point in the evidence is Thom's opinion, also expressed to me personally, that the young when he first saw them were so recently fledged that the nest must have been in the brambles which they were frequenting. This is quite contrary to the recorded nesting habits of the Moustached Warbler, all of the rather small number of observers who have studied its breeding habits having found nests only in reeds *Phragmites* or other vegetation over water. Such sites are, however, available very close at hand and Thom's opinion may be mistaken. The breeding of this Mediterranean bird in the British Isles is so intrinsically improbable that if it is to be fully accepted the evidence ought to be as complete and irrefutable as it can possibly be made, with no flaws in it, and this point about the nest is certainly one on which critics might not unreasonably fasten. In the nature of the case the nest *cannot* be very far from where the young were seen, and since we know it is there it ought to be findable. I therefore feel strongly that as soon as the vegetation has died down a little no pains should be spared to find the nest. Every bit of the reeds and other aquatic vegetation within a reasonable distance should be combed out, even if it means some deep wading, and a similar determined effort should be made to find what nests exist in the brambles, etc. I realize that some search has been made already, but it cannot

have been exhaustive, since, as I have said, we know positively that the nest must be there. The breeding of Moustached Warblers in England, and on a ballast pit instead of, say, on the Broad or some such place, is so fantastic that pending the result of the proposed search I feel it would be proper to suspend judgement as to whether the occurrence can be accepted as conclusively proved or not.

Nesting habitat

A. S. Thom described the territory as 'a well-defined area, roughly 30 yards square; lying between a grass cart road and the water edge of a railway ballast pit, bounded at North and South ends by tall Willow and Sallow [*Salix* spp.] bushes and trees. The wire fence along the grass road was overgrown with bramble bushes (thickly intergrown with nettles [*Urtica*] and thistles [*Cardueae*]) which extended 10–12 feet into the territory. In this the nest was believed to be situated; at least the young, in early stages roosted and were fed here. From bramble bushes to water's edge was thickly carpeted with Coltsfoot [*Tussilago farfara*] leaves. Along the water edge, and extending out for some distance grew Reed Mace [*Typha*].'

The first sightings of the birds were on 3rd August, adjacent to and over the Reed Mace (the 'reedbed'). The following morning both adult birds were seen carrying food repeatedly from the reedbed into a thick bramble hedge, making feeding visits every two or three minutes. Each adult entered the hedge by a favoured route, several yards apart and it was therefore assumed that they were feeding young which had already left the nest. The first juvenile was seen near the top of the bramble hedge on the afternoon of 4th August. On 7th August, a second juvenile was seen, which appeared to be so recently fledged that it had very limited powers of flight. On 8th August, three juveniles were seen together, one of which could fly only short distances. The last sighting was on 20th August.

Bernard Tucker recommended a thorough search for the nest because he realised that a nest in brambles was a fundamental weakness in the case for Moustached Warbler. An exhaustive search for the nest was made inside the territory. All the bushes which were too thick to be searched properly were cut down and examined. Thom said: 'Five old nests were found, none of which, I feel confident, belonged to the

birds under discussion. The reeds were also searched to a water depth of three feet (five yards from shore), with no success. Since our search of the bramble bushes, it seems almost certain that the birds could not have nested there, despite the fact that the two birds, obviously newly fledged, flushed on the 6th and 7th respectively, could only flutter a few yards.'

In the published account (Hinde & Thom 1947), Thom changed his story slightly to remove all reference to the five nests that were found. The published article states that 'It is quite certain that there was no nest in the bramble or anywhere in the vicinity that could possibly have been that of a Sedge Warbler.' No information is given about the five nests that were found, or to what species they might have belonged.

Thom used the fact that he couldn't find a suitable nest in the brambles or in the nearby reed mace as evidence that the birds must have nested 'in some inaccessible part of the reedbed'. The reeds were searched up to 5 m from the shore, and the brambles were 10 m from the water, so the implication is that the young birds must have flown more than 15 m prior to 4th August. However, juveniles were first seen in the brambles on 4th August, one of which could barely fly on 7th August, and must surely have originated from a nest in the brambles. The adult birds were watched carrying food to the brambles every 2–3 minutes during 4th–7th August. If one juvenile could barely fly on 7th, it could not have moved the 15 m from the reeds to the brambles prior to 4th August. A previously unpublished detail is that Thom actually caught one of the recently fledged juveniles with his hands on the late evening of 7th August, but the bird escaped. Surely only a recently fledged chick would allow capture by hand? The period from fledging to maturity given in BWP is c. 12 days, young presumably hatching synchronously, so the four days from 4th to 7th would be about one-third of this period. Moustached Warbler invariably nests over water, usually among reeds or reed mace. Reed mace (also called *Typha* or bulrush) was present in the nearby water, yet the birds did not choose this as their nesting habitat.

In his original analysis, Tucker said that judgement on the identification should be suspended until a thorough search for the nest had been made. However, Tucker presumably accepted Thom's suggestion that the birds must

have nested in some inaccessible part of the reedbed, because he published the account in *BB* the following year (Hinde & Thom 1947).

The presumed female did most of its foraging under the Colts-foot leaves, i.e. among dry vegetation. Later, the juveniles moved from the brambles into the Colts-foot, where they too did most of their feeding. According to *BWP*, Moustached Warblers feed 'by picking and probing vegetation at or near [the] water surface', so it appears that the foraging habitat as well as the nesting habitat does not accord well with Moustached Warbler.

Colin Bibby's excellent study of Moustached Warblers (Bibby 1982) confirms that the Cambridgeshire nesting habitat was extremely atypical. Bibby stated that: 'Moustached Warblers breed in wetlands, favouring places where Reed Warblers are more likely than Sedge Warblers to be their neighbours. Comparative morphological studies (Leisler 1975) show that Moustached Warblers have relatively large feet, with a thick hind toe and long claws. The spread angle of the front toes is comparatively small. These are adaptations of the foot for vertical climbing, and the Moustached Warbler occurs in vegetation with a strong vertical structure, such as reeds *Phragmites* rich in fen-sedge *Cladium*, or beds of club-rush *Scirpus* or bulrush *Typha* (Leisler 1973). It is absent from pure *Cladium* beds where a walking species such as Savi's Warbler *Locustella luscinioides* is more at home. It is also absent in the drier areas with a tangle of soft-stemmed vegetation, where Sedge Warblers might occur. The Moustached Warbler's climbing skills are best seen in *Typha*: it is the only European *Acrocephalus* warbler which easily can, and does, walk up the sides of the flattened leaf blades.'

The original published account

Earlier, I suggested that the original published account (Hinde & Thom 1947) had cherry-picked from the descriptions. The most glaring example of this is in the description of the juveniles. Only three observers saw the juveniles well enough to give a description. Darlington described the juvenile supercilia as 'more yellowish in tone'; Thom described them as 'yellow-buff in colour', whereas Hinde said that they were 'indistinguishable from adult'. Hinde & Thom (1947) stated: 'Superciliary stripe the same as in adults, but slightly cream in tone.' Similarly, the juvenile flanks were described as

'faint reddish-brown on posterior region of flanks' in Hinde & Thom, yet only Thom described them as such. The remaining two observers described the flanks as buff. The juvenile crown colour was also described in Hinde & Thom as very dark brown, yet this was only Hinde's description, the other two described the crown as warm brown (Thom) and rich brown (Darlington). Here are three examples where the minority view was selected because it best fitted the identification as Moustached Warbler.

The outcome of the 2005 assessment

When assessing a potential 'first' for Britain, BOURC tries to establish whether the case is absolutely watertight. We would certainly expect most, if not all of the salient field characters to have been described, but we would also expect the descriptions not to contain any features that are inexplicably wrong for that species. With the breeding Moustached Warblers, the first part of those criteria were arguably fulfilled (chestnut upperparts, blackish crown and white supercilium). The problem lies with the features that are unquestionably wrong, most notably the pale legs of all five birds, the definite lack of a moustachial streak in all five birds, the brown crowns of the juveniles, the rather extensive brown streaking in the crowns of all birds, the lack of rufous on the flanks of the female and juveniles, the buff/yellowish tinge to the juvenile supercilia and the contrastingly rufous rumps. The fact that the nesting habitat was completely wrong for Moustached Warbler simply compounded the doubts that had already been raised over the plumage and bare-part characters. The conclusion of BOURC members, in June 2005, was that this record should be rejected.

The Wendover record

Following the rejection of a record previously accepted as a 'first', BOURC's next task is to establish whether any subsequent records are acceptable as a first for Britain. This process was simplified by the review published by BBRC (Bradshaw 2000), which concluded that the 1965 Wendover record was the only remaining record that was acceptable.

This bird was caught in a mist-net next to a small reservoir at Weston Turville, near Wendover, at about 16.30 hrs on 31st July 1965. It was first assumed to be a worn adult Sedge

Warbler. However, when it was taken from the bag to be ringed, its overall paleness, coupled with the strikingly white throat and supercilium, prompted closer examination. The wing formula ruled out Sedge Warbler, but an adult of that species was nevertheless brought in for direct comparison. The mystery warbler had a whiter throat and supercilium than the Sedge, and lacked any rufous on the rump. A detailed description was taken and, after *The Handbook and Identification for Ringers* (Williamson 1963) had been consulted, the bird was eventually identified as an adult Moustached Warbler. The bird was then taken to Kenneth Williamson's home, where he confirmed the identification and checked the wing formula on both wings. He did not take a description of the bird because he had been reassured that a full in-hand description had already been taken.

This record was not expected to cause any problems because (i) the bird had been trapped and (ii) Kenneth Williamson, one of the great authorities on Palearctic warblers and author of

the landmark BTO ringers' guides, had checked the wing formula. Williamson was also, incidentally, on BOURC in 1970 when the Cambridgeshire breeding record was assessed and accepted. The wing formula seemed to confirm the identification, but the Wendover bird also showed a number of features that were apparently wrong for Moustached Warbler, in particular pale legs and the lack of a black crown. These were features that had figured prominently in the 2005 BOURC rejection of the Cambridgeshire record. In addition, there was no specific mention of black streaking on the mantle ('mantle and scapulars sandy brown with black bases'), although this transcription may perhaps not be incompatible with an in-hand description of streaked upperparts. The bird was in extremely worn plumage, which we initially assumed might have explained the pale crown colour, and we also assumed that there might be variation in bare-part coloration. Other features that caused concern were the overall paleness of the plumage, with no chestnut coloration; the

Table 1. Comparison of biometrics taken from the 'Wendover warbler' with those for Moustached Warbler *Acrocephalus melanopogon* of the nominate race and eastern race *mimica*, Paddyfield Warbler *A. agricola* and Sedge Warbler *A. schoenobaenus*. Data from Williamson (1968) (BWP figures in parentheses). All measurements in mm. SS = secondaries. 'Tail rounded' = difference between shortest and longest tail feather.

	Wendover warbler	Moustached (<i>melanopogon</i>)	Moustached (<i>mimica</i>)	Paddyfield	Sedge
Wing length	55	52–58 (55–62)	59–67 (57–64)	53–61 (55–61)	59–72 (62–71)
Tail length	50	44–52 (44–53)	49–60 (49–60)	47–60 (48–56)	39–56 (42–51)
Bill (skull)	11.5	13–15 (14–16.4)	14–16 (14.9–16.3)	13.5–16 (14–15.5)	13.5–16 (13.6–15.5)
Tarsus	19.5	18–22 (19.9–21.9)	21–23 (21.1–22.9)	21–23.5 (20–23)	20–23 (20–22.5)
Emargination	P3/4/5	P3/4/5 (P3/4/5/(6))	P3/4/5 (P3/4/5/(6))	P3/4/5 (P3/4/5)	P3 (P3)
P1 (mm > primary coverts)	4.5	5.5–8 (5–9)	(5–9)	1–4 (0–6)	About half length of pc (-1–-7)
P2 (mm < wing point)	4	5.5–7 (5–9)	(5–9)	3–5 (3–6)	0.5–1 (0–2)
Wing point	P3/4/5	P3/4/5 (P(3)/4/5)	(P(3)/4/5)	P3/4/5 (P3/4/(5))	P3 (P3)
P6 (mm < wing point)	2	0.5–2.5 (1–3)	(1–3)	1.5–4 (1.5–3.5)	7–8.5 (6.5–8.5)
P7 (mm < wing point)	4	2.5–4 (3–4)	(3–4)	3–6 (3–6)	10–11
P10 (mm < wing point)	6	7–10 (7–10)	(9–11)	7.5–11 (7–10.5)	14–17 (14–19)
Notch P2	well down SS	well down SS (12–16 mm < wing point)	–	well down SS (11–16 mm < wing point)	P7–P9 (8–13 mm < wing point)
Notch P3	4 mm below SS tips	below SS tips	–	opposite SS tips (up to 4 mm below SS tips)	–
Tail rounded	8	9–12 (7–10)	9–12 (7–10)	8–12 (6–9)	4–8 (3–8)

paleness of the ear-coverts, with no mention of a moustache; and the lack of rufous on the flanks. Furthermore, the tongue was described as 'canary yellow' (adult Moustached Warblers have bright orange tongues). All of these features are wrong for Moustached Warbler, yet the wing formula and biometrics ruled out Sedge Warbler and were right for Moustached Warbler.

While compiling the file on this bird, I asked BOURC member Andrew Lassey if he could provide a ringer's interpretation, to explain to non-ringers on the Records Committee why the in-hand data ruled out Sedge Warbler. He pointed out four key features, including the wing length of 55 mm that was too short for Sedge Warbler, and even ruled out the longer-winged eastern race of Moustached Warbler. However, I had asked the wrong question, and *should* have asked if any other species had a similar wing formula and biometrics. When Andrew Lassey came to comment on the file, he noticed that Paddyfield Warbler *A. agricola* has remarkably similar biometrics and wing formula (table 1).

Andrew Lassey highlighted the following points from this table. The bill length of 11.5 mm is slightly short for either species but this may be a simple recording error (and is not significant in terms of species identification). The tail length of 50 mm is noteworthy because the Wendover bird was in moult, with the two central pairs of tail feathers only one-third grown. If allowance were made for tail growth, it would place the tail length at the upper limit for the western race of Moustached. Two of the key measures of wing structure, the first and second primary measurements, are better for Paddyfield than for Moustached (they fall outwith the range for Moustached given by both Williamson (1968) and BWP). The only measurement which is arguably better for Moustached is the notch on the third primary, which fell 4 mm beyond the tips of the secondaries, although this is within the range given for Paddyfield in BWP.

In addition, the in-hand description said that the supercilium extended c. 5 mm beyond the eye, which is consistent with Paddyfield Warbler but too short for Moustached. The pale crown and cheeks, pinkish-yellow legs and yellow tongue would also be consistent with Paddyfield Warbler (and wrong for Moustached Warbler); while the description of the mantle/scapulars is at best ambiguous and at worst wrong for Moustached.

However, there are also features that appear to be more supportive of Moustached than Paddyfield Warbler. The growing brown crown feathers had blackish bases where they were emerging from the sheaths. The sandy-brown mantle and scapular feathers also had blackish bases. The tail was also faded blackish-brown, as were the flight feathers.

Most people would not think that a streaked *Acrocephalus* could be confused with an unstreaked one, but Shirihihi *et al.* (1996) included a section in the Moustached Warbler chapter entitled 'Separation from Paddyfield'. Shirihihi *et al.* stated that: 'where Moustached (*mimica*) and Paddyfield Warbler breed together in the same habitat, worn adults can cause problems. In June–July, both are very heavily worn and look so similar (faded sandy-grey with almost no pattern in plumage) that they are best identified by size, shape and voice; Moustached usually also shows remnants of blackish centres to (mainly smallest) tertials and slightly darker crown, and its bill (unlike Paddyfield's) is all dark.' Furthermore, the problems involved in distinguishing Paddyfield from pale/leucistic Sedge Warbler have also been documented (Flumm & Lord 1978).

Kenneth Williamson made very few comments on the bird, but it is difficult to reconcile some of his comments with elements in the description. For example, he said: 'the plumage was all right and suggested the typical race', yet there was no mention of chestnut upperparts or a black crown. He also stated that he had 'seen no specimen resembling this in head plumage', implying that the plumage was, in fact, not 'all right'. He also failed to mention that the rest of the plumage was atypical too.

We assumed that there must be variation to explain the unusual bare-part coloration, so we contacted Joan Castany in Spain, who has a great deal of ringing experience of Moustached Warbler and is a leading researcher of Moustached Warblers in Spain. He studied variation in Moustached Warblers for his PhD thesis at the University of Valencia and has continued this research since then. We asked him whether Moustached Warblers could ever show pale legs and if adults ever showed canary-yellow tongues. The answer was an unequivocal no to both questions. Furthermore, he said that the legs of all ages of Moustached Warbler are consistently dark, but contrasted this with Reed Warbler, which displays a great range of varia-

tion in leg colour. He also said that juvenile Moustached Warblers had yellow tongues but that the colour changes to bright orange at the age when they lose their tongue spots. BWP states that tongue spots gradually fade from the age of 2–4 months and are always absent by the spring of the second calendar-year. In other words, a non-juvenile Moustached Warbler in late July should have had an orange, not yellow tongue. In conclusion then, the description of the plumage and part-colours of the Wendover bird does not fit Moustached Warbler, and the biometrics and wing formula do not rule out Paddyfield.

It is almost certain that Ken Williamson had never seen a live Moustached Warbler, although he was familiar with museum specimens. In addition, he had seen only one Paddyfield Warbler previously, that being a first-winter on Fair Isle, Shetland, on 16th September 1953 (i.e. almost 12 years earlier). In contrast to the Fair Isle bird, the second for Britain, the Wendover bird was in extremely worn plumage, and was in tail moult too. He was also presented with a bird which had been identified as a Moustached Warbler, and was effectively asked simply to check the biometrics and wing formula. It must have been extremely difficult for him to think laterally in this situation, and to come up with a radically different conclusion. He did not take a description but remarked that the head plumage did not resemble that of any specimen of Moustached Warbler he had seen at the Natural History Museum while researching his ringers' guide to the genus *Acrocephalus*. He also commented that he had not seen a skin of Moustached Warbler in such an advanced state of moult. Williamson's concluding comment was that 'the small size and the characteristic wing formula (which I checked on both wings) ruled out anything but *melanopogon*.' So it would seem that Williamson had not considered the unstreaked Paddyfield Warbler, which was not ruled out by the small size and characteristic wing formula.

The Wendover record was circulated around BOURC and, after much debate, it was decided unanimously that the bird was not acceptable as a Moustached Warbler. BOURC is not saying that the Wendover warbler was definitely a Paddyfield, merely that on the available evidence Paddyfield Warbler cannot be excluded, and so the identification as Moustached Warbler is not 100% certain.

Acknowledgments

Thanks to all the following BOURC members, past and present, for their help, and for commenting on the article: Colin Bradshaw, Martin Collinson, Andrew Harrop, Andrew Lassey, Ian Lewington, Bob McGowan, Eric Meek, Tony Prater, Steve Votier, Graham Walbridge plus Steve Dudley, BOU Administrator. Special thanks to Bob McGowan for researching skin collections and help with references, and to Andrew Lassey for first spotting the in-hand anomalies in the Wendover record. Keith Vinicombe and Ian Wallace provided helpful comments at the outset. Joan Castany provided a very informed opinion on variation in bare-part coloration in Moustached Warblers. Ana Muriel translated the correspondence from Joan Castany. Ian Dawson provided many references and very useful comments on an early draft. Roy Taylor provided in-hand photographs of Moustached Warblers, and much useful discussion on behaviour and ecology of this species. Mark Adams (Bird Group, NHM), facilitated access to research collections at Tring.

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EDITORIAL COMMENT Colin Bradshaw, Chairman of the British Birds Rarities Committee, said: 'BBRC was in agreement with the findings of BOURC that Moustached Warbler should no longer be on the British List. This set of records shows the strength of the two-committee system when considering first and particularly historical records for Britain. BBRC members have to fit such reviews of past records into a busy schedule of contemporary record assessment; this makes the arrival of 30+ pages of historical documents something of a mixed blessing, while such events are the *raison d'être* of BOURC.

'In our initial assessment of the Wendover bird we had concentrated on whether Sedge Warbler could be excluded confidently and we reached the conclusion that it could. We are indebted to Andrew Lassey and BOURC for showing that there were other alternatives to be considered and, while no other species is proven, this situation makes the record unsafe as a first for Britain.

'The situation with the Cambridgeshire birds is easier to explain. Although the system of having ten independent voices in BBRC is designed to minimise errors, in this case, partly because we did not have access to all the archives at the time of our assessment, we made a mistake in our judgement.'

Letter

Threat to carrion-feeding birds of prey posed by EU legislation

I refer to the very real concerns regarding food supplies of carrion-feeding birds of prey within the European Union expressed, with regard to Spain in particular, by Jeanette and Jeremy Brock (*Brit. Birds* 99: 374–375). In fact, the dumping of carcasses in secure sites for the feeding of such birds is permitted in Greece, Spain, France, Italy, Cyprus and Portugal by Article 1 of Commission Decision 2003/322/EC as amended by Decisions 2004/455/EC and 2005/830/EC. Four vultures, two eagles and two kites are listed as birds that may be so fed. The

fact that the six countries named have applied for, and been granted, permission for such feeding shows that at central government level in these countries the potential problem has been recognised. The problem would thus seem not to be that the dumping of carcasses has been banned, but rather that local authorities may not be implementing measures to allow the continuation of this tradition within the straightforward and simple requirements of the Decision.

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Conservation research news

Compiled by Arjun Amar and Jeremy Wilson



Vulnerability of male and female Pied Flycatchers to predation by Sparrowhawks

Some species are more vulnerable to predation than others and similarly, within a given species, one sex may be more vulnerable to predation than the other. Males may be more vulnerable than females, for example, because of behaviours related to attracting a mate or securing a territory, such as signalling and display. However, some studies have found higher predation rates for females, suggesting that factors other than coloration and mate acquisition behaviours can influence predation risk (Götmark *et al.* 1997).

In a recent paper, Peter Post and Frank Götmark investigated this issue by looking at Eurasian Sparrowhawk *Accipiter nisus* predation of Pied Flycatchers *Ficedula hypoleuca*. They examined the time budgets and foraging behav-

iour of male and female Pied Flycatchers and compared the predation rates by Sparrowhawks on the two sexes over a ten-year period using prey remains at plucking posts. They found that more males than females were predated by Sparrowhawks during the pre-laying period, but there were fewer females present at this time as females arrive on the breeding grounds later than males. However, predation rates of both sexes were higher in this pre-laying period than during the incubation and nestling periods, and this was thought to be due to a shift in habitat and prey choice of hunting Sparrowhawks. Later in the breeding season, open habitats were found to be hunted preferentially by Sparrowhawks, when more abundant and more easily caught fledgling birds became available.



249. Male Pied Flycatcher *Ficedula hypoleuca* at nestbox, Vaala, Finland, July 2004.

David Tipling/Windrush

The authors found no difference in the number of males and females taken during either the incubation or the nestling periods, despite the fact that females spent 77% of their time during the incubation period on the nest, and therefore safe from Sparrowhawks. Taking this into account, predation mortality for females was 4.7 times higher than for males per unit of time spent outside the nest during the incubation period. This higher level of vulnerability was thought to reflect differences in behaviour at this time; and, indeed, when females were out of the nest they spent more time flying and foraging than did males. In a possible attempt to offset the dangers of this

behaviour, females did spend more time foraging in less exposed sites and on higher perches than males, which should, in theory, reduce the risk of predation. This study suggests that vulnerability to predation is linked to behaviours involved in the trade-off between foraging and vigilance.

Götmark, F., Post, P., Olsson, J., & Himmelmann, D. 1997. Natural selection and sexual dimorphism: sex-biased Sparrowhawk predation favours crypsis in female Chaffinch. *Oikos* 80: 540–548.

Post, P., & Götmark, F. 2006. Predation by Sparrowhawks *Accipiter nisus* on male and female Pied Flycatchers *Ficedula hypoleuca* in relation to their breeding behaviour and foraging. *J. Avian Biol.* 37: 158–168.

Climate change causes population decline in Pied Flycatchers

Climate change is making its mark on ecosystems; the advance of seasonal activities from flowering in plants to emergence of insects and breeding of birds is now a well-established phenomenon in temperate Europe. However, these changes can cause problems for some species if varying speeds of response in different parts of the food chain lead to a mismatch between the timing of reproduction in one organism and the timing of peak availability in another that forms its main food supply.

Christiaan Both and his co-authors have previously used long-term population studies of Pied Flycatchers in The Netherlands to show that although laying date has advanced, the extent of this has been limited by the fact that the birds' arrival dates from Africa have remained unchanged. As a result, the onset of breeding has not advanced as rapidly as the availability of their caterpillar (larval Lepidoptera) food supply and there has been increasing selection to favour birds breeding earlier. In a recently published study, these authors have extended this work by testing whether Pied Flycatchers are more likely to have declined as the mismatch between timing of breeding and timing of peak caterpillar availability increases. They collated annual population counts from 1987 to 2003 from ten nestbox-breeding Pied Flycatcher populations of widely varying population trend across The Netherlands. Some populations had shown no overall change during this period, while others had declined by up to 6% per year. These popu-

lation changes were then compared with both the timing of caterpillar availability and the proportion of Great Tits *Parus major* producing second broods in the same area. The results are striking. Pied Flycatcher populations declined by as much as 90% (between 1987 and 2003) at locations where the caterpillar food peak was early (in early May) and where few Great Tits reared a second brood; but declines were limited to 10% or less where the caterpillar peak was late (in late May) and a higher proportion of Great Tits reared a second brood. Importantly, the authors also showed that these results did not simply reflect some general decline in habitat quality in areas with an early caterpillar peak. In fact, the biomass of caterpillars was highest in areas where their abundance peaked early.

This important study shows that misalignment of the timing of breeding and the timing of food supply for reproduction, driven by climate change, is capable of driving a large population decline over a period of just 16 years. Pied Flycatchers and other long-distance migrant songbirds may be particularly susceptible if constraints encountered during migration, which limit how early they can return from their wintering grounds, are coupled with dependence on a seasonally limited food resource for reproduction.

Both, C., Bouwhuis, S., Lessells, C. M., & Visser, M. E. 2005. Climate change and population declines in a long-distance migratory bird. *Nature* 441: 81–83.

Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the BB Editorial Board. Those considered appropriate for BB will be published either here or on our website (www.britishtobirds.co.uk) subject to the availability of space.

Comment on 'Holboell's Red-necked Grebe' in Wester Ross in 1925

The sole British record of 'Holboell's Red-necked Grebe' *Podiceps grisegena holboellii* relates to a specimen shot in Wester Ross by John MacGregor in September 1925 (BOU 1928; Lowe 1928). Lowe's notes state: 'obtained at Aultbea' (p. 53) and 'shot at Aultbea' (p. 70) and, since then, this locality has consistently been associated with the record (e.g. BOU 1928, Witherby *et al.* 1940, Baxter & Rintoul 1953, Naylor 1996, Andrews & Naylor 2002).

The locality 'Aultbea', however, derives from a misunderstanding or error by Lowe, which was subsequently perpetuated by most other writers. Lowe (1928: 70) confirms the bird's provenance by reference to a letter written by the collector 'Mr J. MacGregor of Aultbea'. The reprinted letter, however, indicates the author's address as 'Gruinard, by Aultbea' and he (MacGregor) writes of the bird as 'shot by me here', 'observed... in the Bay here for a few days', 'seemed to get its food in a sandy bay here' and 'killed in a wild state here'. MacGregor was Keeper on the Gruinard Estate and he lived in a house adjacent to Gruinard House, 9 km from Aultbea, the nearest village. His postal address and terminology indicate that 'here' clearly referred to Gruinard Bay, and not Aultbea.

Interestingly, Witherby (1928) correctly stated 'shot... in a bay near Aultbea', though this precision was lost on publication of the *Handbook* (Witherby *et al.* 1940). Bannerman (1959) simply stated 'shot by Mr J. MacGregor of Aultbea in Ross-shire'.

Gruinard Bay therefore appears to be the accurate collection locality, and this was specifically identified as such by the collector. In habitat terms, unlike the deep waters and rockier shores of Loch Ewe at Aultbea, Gruinard Bay is sizeable, with areas of shallow, sandy-bottomed waters and may be considered a more

likely locality for the grebe (Stout & Nuechterlein 1999; Fjelds  2004).

The grebe was prepared by a Birmingham taxidermy firm (Betteridge), but its subsequent fate is unknown. There is no ostensible reason that the specimen was acquired by Birmingham Museum and Art Gallery, but it does not appear to be stored with BMAG bird collections, now at Birmingham University (J. Clatworthy pers. comm). 'Holboell's Red-necked Grebe' breeds mainly in North America, with a restricted population in the Eastern Palearctic. It is differentiated from nominate *grisegena* by its larger size and this characteristic was noted by John MacGregor. The Wester Ross locality indicates a likely Nearctic origin for the British record.

Acknowledgments

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Identification and status of Dunn's Lark in northwest Africa

Dunn's Lark *Eremalauda dunni* is probably the least well known of all the Palearctic larks. Two races are recognised: *E. d. dunni* occurs along the southern fringe of the Sahara in northern Africa, while *E. d. eremodites* inhabits the Arabian Peninsula. Like many desert species, Dunn's Larks are highly nomadic (Dean 2004), their movements being dictated by local rainfall conditions; consequently, their appearance away from the core range remains highly unpredictable.

Most European birders who have encountered Dunn's Lark are likely to have seen the eastern race *eremodites* in Israel, where it is an erratic visitor (Shirihai 1996). The nominate race is even more enigmatic, occurring in Mauritania, southern Algeria, northern and central Mali south to Tombouctou [Timbuktu], the Aïr region of northern Niger, north Chad and the Kordofan region of Sudan to the west of the River Nile (Vaurie 1959). Within the boundaries of the Western Palearctic in Mauritania, the species was first recorded at Chegga in 1930 (Heim de Balsac & Mayaud 1962), and was recorded breeding at Zemmour in 1970 (de Naurois 1974). There have been few subsequent records, but these include 20 at 21°29'N 11°27'W on 5th January 2005 (K. de Rouk per S. Piner), and two at Bou Lanouar 21°19'N 16°43'W on 9th January 2006 (S. Piner pers. comm.).

While conducting an ornithological survey

of the Dakhla-Awsard Road in south-central Western Sahara (Oued Ad-Deheb region), Morocco, we discovered, and photographed, three Dunn's Larks on 12th March 2006. These birds, one of which was observed song-fighting, were found at 22°79'N 14°61'W, in an area of Saharo-Sahelian stony savannahs, interspersed with patches of grasses *Andropogon*, *Aristida*, *Lasiurus* and *Panicum*, along with scattered *Acacia* trees. The presence of Dunn's Lark in the region had been suspected previously (J. Franchimont pers. comm.), but our observations represent the first confirmed records for Morocco. Other typical birds of this area included abundant breeding Black-crowned Sparrow-larks *Eremopterix nigriceps*, and Desert Sparrows *Passer simplex*, both species that are also virtually unknown in the region.

Identification

The nominate race of Dunn's Lark differs from the Arabian form *eremodites* in several respects. It is a smaller, slighter bird, with a shorter and stubbier bill, shorter tail and tarsus, and appears distinctly more rufous overall. The upperparts are sandy-brown with a slight pinkish tinge, while the rather pale and uniform wings exhibit modest contrast between the tertials and the darker rufous-brown primary tips, a feature which is more pronounced in *eremodites*. The hindneck is streaked rufous (grey in *eremodites*), the crown-streaking is rufous-brown



Alex Lees

250. Dunn's Lark *Eremalauda dunni dunni*, Awsard, Western Sahara, Morocco, March 2006. Note the bold eye-ring, bulky bill and fairly uniform sandy upperparts with dark, rufous-brown-tipped primaries.



Alex Lees

251. Dunn's Lark *Eremalauda dunni dunni*, Awsard, Western Sahara, Morocco, March 2006. Note the particularly large head with bulging 'hamster-pouch' cheeks.

(not dark brown as in *eremodites*) and the mantle and scapulars have broader rufous-brown centres, lacking pinkish-grey fringes. The facial markings of *dunni* are much less pronounced than on *eremodites*: the malar stripe is virtually absent and the moustachial streak can appear indistinct, although *dunni* does possess a prominent white eye-ring and a long white supercilium.

Within the region concerned, care should be taken to eliminate Kordofan Bush-lark *Mirafra cordofanica*, which resembles Dunn's Lark but has a thinner bill, a slight crest and a pale unmarked face, and shows only a limited amount of breast-streaking. Female Black-crowned Sparrow-larks also bear a passing resemblance to nominate Dunn's Lark but they are distinctly smaller, lack the facial markings of Dunn's Lark, and show a dark median-covert bar and black underwing-coverts. Separation from the similarly sized Bar-tailed Desert Lark *Ammomanes cincturus* has been extensively dealt with elsewhere (e.g. Snow & Perrins 1998), but owing to their restricted head markings, the nominate race of Dunn's Lark is more difficult to detect among the sympatric and much more abundant Bar-tailed Desert Larks. We found that the most useful feature to separate these two species was the stronger head and bill of Dunn's Lark. Although differences in tail pattern were useful, we considered the tail pattern of nominate Dunn's Lark to be less well



Alex Lees

252. Dunn's Lark *Eremalauda dunni dunni*, Awsard, Western Sahara, Morocco, March 2006. Note the strong bill with upward-curving lower mandible and prominent dark lower eye-arc giving the bird a 'tired' expression.

marked than that of *eremodites*, particularly on worn or bleached individuals. Nonetheless, the predominantly pale tail with darker sides of Dunn's Lark is completely different from the obviously 'bar-tailed' appearance of Bar-tailed Desert Lark.

Further ornithological exploration of the region will be required to establish the status of Dunn's Lark at the northwestern fringe of its African range. It would be foolhardy to try and draw too many conclusions from the few records that exist from northwest Africa. However, the frequency with which it has been



Alex Lees

253. Habitat of Dunn's Lark *Eremalauda dunni dunni*, near Awsard, Western Sahara, Morocco, March 2006.

encountered in neighbouring Mauritania in recent years suggests that it may not be uncommon here. Moreover, now that the political situation in Western Sahara has stabilised, there may be more discoveries to be made in this forgotten corner of Africa.

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A review of the status of Black-eared Wheatear in the Maltese Islands

Black-eared Wheatear *Oenanthe hispanica* is a regular passage migrant in the Maltese Islands, occurring annually in small numbers during spring and autumn. In 1982, a pair nested in Malta for the first time; these birds were of the eastern race *Oe. h. melanoleuca* [hereafter '*melanoleuca*'], and the white-throated morph (Sultana & Gauci 1981–83). Until recently, almost all published accounts of Black-eared Wheatear have stated that both the western race *Oe. h. hispanica* [hereafter '*hispanica*'] and the eastern race *melanoleuca* occur regularly in the Maltese archipelago. De Lucca (1969) first suggested that *hispanica* was unlikely to occur and that past records were erroneous, although many subsequent authors ignored this. This short article presents a critical review of the historical and recent evidence of the status of Black-eared Wheatear in the Maltese Islands, and attempts to clarify past misconceptions.

Historical perspective: a review of Maltese literature

Each of the two races of Black-eared Wheatear occurs in two distinctive plumage morphs, determined by throat colour. During the early nineteenth century, however, most authors considered that the black-throated morph of both races represented a distinct species, termed 'Russet Wheatear *Saxicola stapazina*', while the white-throated morphs were named 'Eared Wheatear *Saxicola aurita*'. Schembri (1843) recorded only the Russet Wheatear from the Maltese archipelago, whereas Wright (1864) recorded both Russet and Eared Wheatear, adding that both occurred annually in spring

and autumn in small numbers. To confuse matters further, Wright subsequently documented the occurrence of the 'Black-throated Chat *Saxicola melanoleuca*', adding that this bird was the eastern race of the Russet Wheatear (Wright 1874). Wright had previously excluded Black-throated Chat from the Maltese list because he considered it inseparable from Russet Wheatear: 'it appears chiefly to differ in the extent of black on the throat, and in having a more eastern range'. Subsequent authors, including Blasius (1895), Despott (1917, 1934), Gibb (1951) and Roberts (1954), perpetuated these misunderstandings to a greater or lesser extent. Although, by the mid twentieth century it was recognised that there were two races of a single species, Black-eared Wheatear *Oe. hispanica*, the two races were often still being attributed erroneously on the basis of throat colour (the white-throated morph being assigned to *hispanica* and the black-throated morph to *melanoleuca*).

Although he discussed both races, De Lucca (1969) was the first to assert that *melanoleuca* was a regular migrant in small numbers in the Maltese Islands, and that *hispanica* occurred irregularly. Sultana *et al.* (1975) stated that both *hispanica* and *melanoleuca* occurred, without elaborating further. Bannerman & Vella-Gaffiero (1976) asserted (quite incorrectly) that *melanoleuca* 'has no business to find itself ever in Malta', perhaps based on the assumption that the entire eastern race winters too far to the east to reach Malta on migration. However, while Bannerman & Vella-Gaffiero disagreed with De Lucca that *melanoleuca* occurred regularly, they

did admit that it had occurred in Malta and they also realised that both *hispanica* and *melanoleuca* are dimorphic; but they maintained that a few individuals of *hispanica* were seen annually during both spring and autumn. Sultana & Gauci (1979, 1982) continued to maintain that both *hispanica* and *melanoleuca* occurred in Malta.

Problems of identification

As the summary above indicates, the identification of *hispanica* and *melanoleuca* in Malta has not been well founded. The status of each taxon was generally accepted without question by successive authors, and misconceptions perpetuated. Early authors used the presence or absence of a black throat to separate males of the two races; later, the strength of plumage coloration was suggested as the key distinguishing feature (e.g. Bannerman & Vella-Gaffiero 1976, Sultana 2001). Unfortunately, many observers in the Maltese Islands have continued to use outdated criteria when identifying Black-eared Wheatears to race, with the consequence that the great majority of males have been misidentified. A comprehensive summary of field identification is provided by Ullman (2003); see also Cramp (1988), Svensson (1992), and Beaman & Madge (1998). As Ullman pointed out, although the coloration of the male's plumage is certainly a pointer to racial identification, it is unsafe to rely on this feature alone. The most reliable way to separate male *hispanica* and *melanoleuca* is the extent of the black mask in relation to the culmen, and this applies equally to both pale- and dark-throated morphs. In *melanoleuca*, the black on the lores usually extends above the bill base to form a narrow black band (1–3 mm deep) across the forehead. In male *hispanica*, the black on the lores barely reaches the top of the bill base, and in most males the black upper edge to the lores does not meet across the forehead, leaving a clearly visible gap above the bill base when viewed head-on. In only a few *hispanica* do the black lores extend to reach the top of the culmen. A less reliable feature is the extent of black in relation to the eye: in most

melanoleuca the mask extends 1–2 mm above the eye, whereas in male *hispanica* the black mask falls level with the upper edge of the eye. Another feature that can be used to separate the black-throated morphs lies in the extent to which the lower edge of the black throat extends onto the upper breast: in many *melanoleuca*, this reaches some 2–4 mm further down the upper breast than in *hispanica*, where it is restricted to the throat, and does not extend onto the upper breast. There is, however, individual variation, and this character alone is not a reliable guide to racial identification. While intergrades cannot always be ruled out, these features represent the most reliable means of separating male *hispanica* and *melanoleuca*, particularly when taken together. Great care is required with the separation of immatures and females, which are generally much more difficult to identify in the field.

Distribution and migration

The western form *hispanica* breeds in North Africa, Iberia and Mediterranean France, and east through north- and central-west Italy to Slovenia; the breeding range of *melanoleuca* extends from southern Italy (the Calabria and Puglia regions) and Croatia through the Balkans and countries bordering the eastern Mediterranean, east to Transcaucasia, western Iran and the northern Caspian region of Kazakhstan (Cramp 1988; Hagemeijer & Blair 1997) (fig. 1).

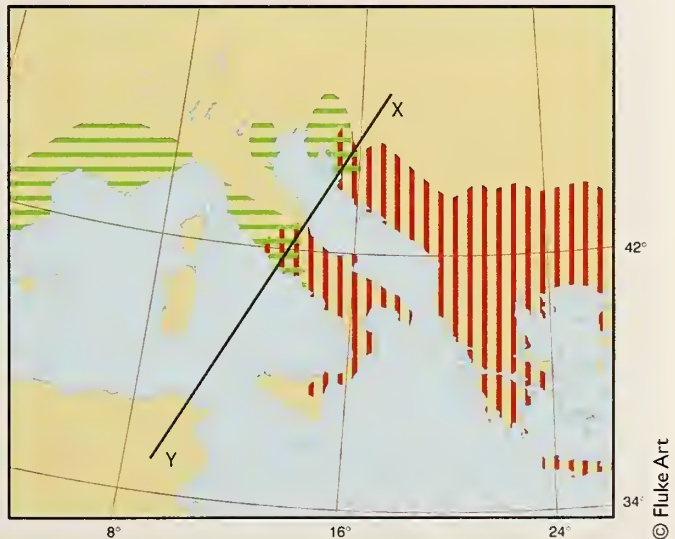


Fig. 1. Breeding distribution of the two subspecies of Black-eared Wheatear *Oenanthe hispanica*: western form *hispanica* (green), eastern form *melanoleuca* (red).

Richard Chandler



254. Male 'eastern' Black-eared Wheatear *Oenanthe hispanica melanoleuca* of the light-throated morph, Israel, March 1989. Historically, birds of the light-throated morph were believed to represent the nominate form, resulting in the misconception that both races occurred on Malta. Birds resembling this individual are believed to account for all claims of 'western' Black-eared Wheatear from Malta. Although this individual is similar to birds of the nominate form, the black feathering of the lores clearly extends above the culmen, enabling it to be identified confidently as *melanoleuca*, even though there is little black above the eye.

Hugh Harrop



255. Male 'western' Black-eared Wheatear *Oenanthe hispanica hispanica* of the light-throated morph, Coto Doñana, Spain, March 2002. 'Western' males are often more richly coloured in spring but following the post-breeding moult, some male *melanoleuca* can resemble nominate *hispanica*. Such *hispanica* males are always separable from *melanoleuca* by the extent of the black mask, which reaches only to the upper edge of the eye, and not above it, and to the bill base but does not extend onto the forehead. It was only recently appreciated that these small differences were significant. No historical claims of *hispanica* from Malta mention this feature, and modern sight records have all proved to be *melanoleuca*.



Richard Chandler

256. Male 'eastern' Black-eared Wheatear *Oenanthe hispanica melanoleuca* of the dark-throated morph, Israel, March 1989. Such individuals greatly outnumber light-throated males, leading to the historical misconception (on Malta) that light-throated males must be *hispanica*. This individual clearly shows the extension of black above the bill base onto the forehead, the black of the mask extending well above the eye, and the lower edge of the throat patch extending onto the upper breast; all features associated with *melanoleuca*.



Hugh Harrop

257. Male 'western' Black-eared Wheatear *Oenanthe hispanica hispanica* of the dark-throated morph, Extremadura, Spain, spring. Compare with the male *melanoleuca* in plate 256.

In winter, *hispanica* occurs in Africa south of c. 18°N, mainly in northern Senegal, southwest Mauritania and Mali, but also in southwest Niger and northern Nigeria (Cramp 1988). A southwesterly heading from the easternmost breeding grounds, in Slovenia (around 15°E), would take birds across the Adriatic and Mediterranean Seas, over the North African coast, presumably in the region between 0°E and 10°E, en route to wintering areas. In Tunisia, this race occurs regularly in autumn from August to mid October, and in spring from March to mid May (Isenmann *et al.* 2005). In Algeria, it is a frequent migrant in autumn, occurring on the High Plateau between Chott es-Sherugi (1°E) and Chott el-Hodna (4°E) from August to October, with a peak in September, whereas in spring it has been recorded more frequently from the coast around Constantine at 7°E (Aïssa Moali pers. comm.). Migrants following such a route would be unlikely to occur in Malta. In recent years, single *hispanica* have been recorded in April and May from the island of Pantelleria, some 240 km northwest of Malta and closer to a southwest-northeast axis between the North African coast and the easternmost *hispanica* populations in Slovenia and central-west Italy. Furthermore, *hispanica* is extremely rare in western Sicily, especially in spring (Corso 2005), while the few records from eastern Sicily (see Iapichino & Massa 1989) are now considered doubtful by some (A. Corso pers. comm.). These observations in Sicily and Pantelleria further support the hypothesis that *hispanica* does not occur regularly in Malta. The precise flight-line of easternmost *hispanica* is still unclear; they may head directly southwest (although perhaps more records in western Sicily and Pantelleria would surely be expected if they did) or they may use a route to the west of the direct line, perhaps via northern Italy and southern France. The observations from Algeria and Tunisia tend to support the latter hypothesis.

Conversely, westernmost populations of *melanoleuca* migrate only slightly west of south (Cramp 1988) to reach wintering regions in Africa east of 5°E, though most occur in Chad, east through Sudan to Ethiopia and Eritrea. Consequently, it seems likely that, in autumn, the Maltese Islands receive *melanoleuca* from regions to the northeast, such as southern Italy and the southern Balkans, en route to Africa.

Discussion

It is clear that there have been persistent difficulties in the identification of migrant Black-eared Wheatears in Malta. Even now, many observers attempt to identify Black-eared Wheatears to race on the basis of plumage coloration, without considering the extent of the black mask in relation to the bill. It seems almost certain that the majority of males which display bright ochre coloration and/or black lores in autumn have been assigned to *hispanica*, based on misconceptions about the appearance of male *melanoleuca*. In early autumn, adult birds are in fresh plumage after a complete post-breeding moult, and plumage tones are much warmer and brighter in both races than in spring and summer. A freshly moulted autumn male *melanoleuca* can appear more richly coloured than a worn male *hispanica* in spring.

These observations are supported by reference to specimens collected in the Maltese Islands, and by photographs of birds from the archipelago. All photographs/specimens of males examined by the author, without exception, clearly exhibit the diagnostic black band above the culmen, together with black above the eye, of *melanoleuca*. All specimens of female Black-eared Wheatears examined also belong to the eastern race, based on plumage characters. In addition, the wintering areas of the two races described by Cramp (1988), and the likely migration route, strongly support the view that *melanoleuca* occurs regularly in Malta in both spring and autumn. It is highly improbable that *hispanica* occurs in Malta at all, and it is likely that all past published records are highly doubtful and should be treated with great caution.

Acknowledgments

Grateful thanks go to Alfred E. Baldacchino, Sam Borg, Carl Camilleri, Andrea Corso, Dr Natalino Fenech, Mark Gauci, David Kihlberg, Dr Aïssa Moali, and Michael Sammut for assistance given with fieldwork, observations, records, photographs, skins, drawings, maps, or review of the draft.

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African Desert Locusts in Morocco in November 2004

During 8th–29th November 2004, I was travelling in Morocco with a group of Swedish and Norwegian birdwatchers – from Had Gharbia, near Tangier, in the north, to Dakhla in the south – and encountered swarms of African Desert Locusts *Schistocerca gregaria* almost daily throughout this period. On many occasions, huge swarms numbering hundreds of thousands, or millions of locusts were encountered. For example, at Oued Massa an estimated two million locusts moved NNE, parallel to the coast, during one hour on 28th November. Similarly, when we were travelling from Agadir to Dakhla between 22nd and 24th November, an estimated 120 million dead locusts were lying along the road and up to 5 m each side of the tarmac. As we headed north from Dakhla on 26th November, we thought that the occurrence had already reached its climax. Yet, it had hardly begun! On 27th November, when we were travelling the 230 km from Tarfaya to Tan-Tan Plage, the ground was covered with locusts; we estimated a mean of 2,000 locusts per square metre on the ground, forming a continuous carpet approximately 150 m wide. As a crude estimate, this would make 69 billion locusts along this 230-km stretch, and this excludes those flying: and the air was full of them!

During the three-week period we spent in Morocco, we witnessed 33 species of bird eating African Desert Locusts (or attempting to catch them). In most cases, this is the first time that

African Desert Locusts have been recorded as food items for these species (Appendix 1), although this insect has been recorded previously in the diet of White-crowned Black Wheatear *Oenanthe leucopyga* (BWP). Of the remainder, locusts or grasshoppers (Acrididae), but not specifically *S. gregaria*, have been recorded as diet items in 27 species, while for the remaining five species, these observations appear to be the first published account of locusts in their diet. While the list of species involved is certainly impressive, it was striking that on many occasions birds declined to hunt locusts, despite the easy availability. Many birds had probably attempted to eat them and realised that they were not worth the effort because they were simply too lean. It thus seems that the billions of locusts invading Morocco in November 2004 did not make life significantly easier for the insectivorous birds present.

In fact, the extensive use of insecticides by the Moroccan authorities to control the numbers may have had adverse effects on all invertebrates, and been detrimental to the food supply of resident, wintering and migrant birds. The scale of insecticide use can be judged from the UN Food and Agriculture Organisation estimate that some 13 million hectares of land were sprayed with pesticides, and 16 million litres of the product were used in north and west African countries to control the locust problem, at an estimated cost of US\$ 315 million

(www.moroccotimes.com, 20th May 2005). On 24th November, at Laayoune, we experienced some effects of the insecticide use. Here, the tamarisks *Tamarix* sp. were coloured red from locusts eating the leaves, but during our visit the area was sprayed with pesticides from a small aircraft. Within minutes of the first spraying, we noticed that the ground below the bushes had turned red – the locusts had simply

fallen off the bushes. We concluded that the locusts were not dead, but that a powerful insecticide had immediately paralysed them. We did not notice any effects on the birds present, including insectivores such as warblers (Sylviidae) and five species of martin (Hirundinidae), although of course they could have been affected in some way.

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258 & 259. African Desert Locusts *Schistocerca gregaria* along the road north of Tarfaya, Morocco, 27th November 2004.

EDITORIAL COMMENT

Dawn Balmer has commented: 'Spring 2005 will be remembered by birders for the delayed arrival of Barn Swallows *Hirundo rustica* in the UK. Records submitted to Bird-Track (www.birdtrack.net) showed that although the first Swallows arrived on time, in mid March, the majority were late in arriving. It was interesting that some birds were in poor condition and were found dead on or near nests; in addition, around 50 were found dead in Hugh Town, on Scilly, in mid May. Bird ringers also noticed that some Swallows had not completed their moult in Africa but had "suspended moult", while many birdwatchers commented on worn-looking Swallows. Reasons for the poor condition of birds and delayed arrival are not clear but there are two obvious possibilities. Firstly, the extensive use of pesticides in Morocco and Mauritania during winter 2004/spring 2005 to control locusts could have reduced the food supply of aerial insectivores such as Barn Swallow. Secondly, birds are likely to have been adversely affected by the extremely cold weather during the winter and early spring in Morocco and the Sahara, snow having been recorded in areas below 500 m in eastern Morocco for the first time in 25 years. Snow was also recorded in the Algerian desert. During spring migration, southern Europe also experienced cold weather and northerly winds, and birders in the Mediterranean reported hundreds of birds gathering over marshes. It is likely that a combination of the reduced availability of insects for Swallows on passage in North Africa and adverse weather conditions in southern Europe and North Africa in early spring led to the late arrival and poor condition of birds in Britain.'



Magnus Ullman

260. African Desert Locusts *Schistocerca gregaria* on tamarisk *Tamarix* sp. near Laayoune, Morocco, 24th November 2004.

For species marked *, *S. gregaria* has previously been recorded as a diet item; ** indicates that locusts or grasshoppers (Acrididae) – but not *S. gregaria* specifically – have previously been recorded in the bird's diet; *** indicates that this is the first time any species of locust or grasshopper has been recorded as a diet item. Dietary information from BWPi.

Appendix 1. List of bird species recorded taking African Desert Locusts *Schistocerca gregaria* in Morocco in November 2004. For species marked *, *S. gregaria* has previously been recorded as a diet item; ** indicates that locusts or grasshoppers (Acrididae) – but not *S. gregaria* specifically – have previously been recorded in the bird's diet; *** indicates that this is the first time any species of locust or grasshopper has been recorded as a diet item. Dietary information from BWPi.

Barbary Partridge <i>Alectoris barbara</i> ***	Lesser Black-backed Gull <i>Larus fuscus</i> ***
Cattle Egret <i>Bubulcus ibis</i> **	Yellow-legged Gull <i>Larus michahellis</i> ***
Little Egret <i>Egretta garzetta</i> **	Great Spotted Cuckoo <i>Clamator glandarius</i> **
Bald Ibis <i>Geronticus eremita</i> **	Hoopoe Lark <i>Alaemon alaudipes</i> **
Long-legged Buzzard <i>Buteo rufinus</i> **	Thick-billed Lark <i>Ramphocoris clotbey</i> **
Lesser Kestrel <i>Falco naumanni</i> **	Thekla Lark <i>Galerida theklae</i> **
Common Kestrel <i>Falco tinnunculus</i> **	Common Bulbul <i>Pycnonotus barbatus</i> **
Lanner Falcon <i>Falco biarmicus</i> **	Desert Wheatear <i>Oenanthe deserti</i> **
Common Coot <i>Fulica atra</i> ***	White-crowned Black Wheatear <i>Oenanthe leucopyga</i> *
Cream-coloured Courser <i>Cursorius cursor</i> **	Black Wheatear <i>Oenanthe leucura</i> **
Bar-tailed Godwit <i>Limosa lapponica</i> ***	Blue Rock Thrush <i>Monticola solitarius</i> **
Whimbrel <i>Numenius phaeopus</i> **	Southern Grey Shrike <i>Lanius meridionalis</i> **
Eurasian Curlew <i>Numenius arquata</i> **	Common Raven <i>Corvus corax</i> **
Common Redshank <i>Tringa totanus</i> **	Common Starling <i>Sturnus vulgaris</i> **
Mediterranean Gull <i>Larus melanocephalus</i> **	Spotless Starling <i>Sturnus unicolor</i> **
Black-headed Gull <i>Larus ridibundus</i> **	House Sparrow <i>Passer domesticus</i> **
Audouin's Gull <i>Larus audouinii</i> **	

County and local bird reports in Britain & Ireland: an update

The most recent review of county and local bird reports available in Britain & Ireland summarised details to autumn 2003 (Ballance 2004), and provided details of issuing bodies or individuals and contact details. Further investigations were made from January to April 2006, with a view to finding new reports that had appeared during the intervening period and establishing the current status of those which had slipped into abeyance or were well behind the expected publication date.

The following amendments to Ballance (2004) are limited to changes of ownership, new arrivals, abandonments, and moves to catch up on long gaps in series. Entries for the last type are limited to reports which, in early 2006, were two or more years behind schedule, i.e. the 2003 issue was not yet published. Although some single-site reports may be published as early as January, most of those covering wider areas do not appear until the following autumn. Any changes of Recorder, as well as telephone numbers, e-mail addresses, etc. have been notified to *British Birds*, to the editors of *The Bird-watcher's Yearbook*, and to the librarians of the four main English institutions which collect series: English Nature (at Peterborough), BTO, RSPB and the Alexander Library, Oxford.

List of reports

As in Ballance (2004), a forward slash (/) in dates is used for a single report issued for more than one year. Any new (or newly discovered) titles are asterisked.

ENGLAND

Bedfordshire

**East Hyde Bird Report*. Private (M. Russell); 2003–; mike.russell@bbsrc.ac.uk Site partly in Hertfordshire.

Berkshire

The Birds of Berkshire. 1998/99 published 2003; 2000/01 to be published eventually; 2002 published 2004; 2003 to be published in 2006.

Annual Report of the Newbury District Ornithological Club. Not published after 2000; no contact could be made.

Cambridgeshire

Paxton Pits Breeding Bird Survey. Now published by The Friends of Paxton Pits; Julian Hughes: e-mail julian.hughes@rspb.org.uk

Cornwall & Scilly

Birds in Cornwall. Series now up to date.

Although many reports are published punctually, there has been a considerable loss over the last five years, amounting to about 30 titles if those 'in abeyance' with no immediate prospect of restarting are included. There have been only about ten instances of reports being revived or created during this period. For this there are many causes: falling membership, financial difficulties, the increasing burden of records submitted, and the realisation that a small local membership is better reached through a website. The disappearance of minor reports is, perhaps, not particularly important, but the delay in producing reports for entire counties and regions poses a threat to the whole system of recording established since 1945. At the time of writing, in April 2006, nine English counties and six Scottish areas have yet to publish a report for 2003; four major Yorkshire reports fall into the same category. It is fair to add that no English county has actually ceased publication of its annual report, but some are struggling to catch up; currently, one Scottish report is in abeyance. The computer has saved some journals, and has on the whole reduced printing costs, but the flood of material now so easily submitted (some of it trivial) has brought its own problems, especially with commoner species.

Derbyshire

Drakelow Wildlife Report. Not issued after 1996.

Carr Vale Bird Report. Publication may continue, but no contact could be made with editor.

Devon

**The Birds of the Axe Estuary Local Nature Reserves*. Private (D. Walters); 2001/02/03; 2004–; tel. (01297) 552616, e-mail davidwalters@eclipse.co.uk

Dorset

Annual Report of the Stour Ringing Group. Status uncertain, no contact could be made with editor.

Durham

Birds in Durham. Report for 2000 published in 2005.

Essex

Nature in North East Essex. Report for 2002 not published; 2003 provides history of the Society; 2004 not published; 2005 resumes with bird report.

East London Birders' Forum. Report in abeyance since issue for 2000.

Gloucestershire

Report of the Cheltenham Bird Club. Not published for years 2002–04. Report for 2005 in preparation.

Greater Manchester

Elton Bird Report. Temporarily in abeyance after 2003.

Piethorne Valley Bird Report. Publication of previous series resumed privately (W. Myerscough); beginning 2003–; tel. (0161) 633 5995.

**Birds of Rochdale*. Private (C. Johnson); 2003–; covers major sites; tel. (07818) 014841.

Hampshire

Hampshire Bird Report. First dates should read: '[1934–57]'.
Hants/Surrey Bird Report. Series ended.

Isle of Wight

Nature Report of the Medina Valley Centre. Series ended after 2003 report.

Kent

Kent Bird Report. First dates should read: '[1934–47]'. Report for 2003 due August 2006.

Report of the Sandwich Bay Bird Observatory. Report covering 2001/02/03/04 planned for late 2006.

Birds of St Margaret's. Series effectively ended with 2001; 25-year summary (covering 1977–2002 plus historic records) published in 2003, but for local circulation only. Now only brief calendar bulletins.

Bockhill & Kingsdown Bird Report. Not published after 2001, but restart is planned, beginning with a ten-year summary.

Lincolnshire & North Merseyside

Marton Mere LNR Bird Report. Publication ceased after 1999.

The Marshside Bird Report. Publication ceased after 2001.

Leicestershire & Rutland

The Birds of Rutland Water. Publication ceased after 1995.

Lincolnshire

Lincolnshire Bird Report. Report covering 1997/98/99 to be published in 2006.

The Scunthorpe & North West Lincolnshire Bird Report. Report for 2000 published in 2005; 2001 in 2006.

London

London Bird Report. Report for 2001 published in 2006.

Greenwich Park Bird Report. Not published after 2000, but updated checklist available.

London Wetland Centre Bird & Natural History Report. Report covering 2001/02 published in 2005; currently in abeyance.

Norfolk

Sheringham Bird Observatory Annual Report. Not published after 2002; currently in abeyance; no contact could be made.

Welney Bird Report. Publication ceased after 2002.

Breckland Bird & Mammal Report. Publication ceased after 1999.

**Birds for the Diss Area of Norfolk*. Private (J. H. Marchant); 1998–2002; now ceased, but database maintained.

Northamptonshire

Northants Birds. Report for 2002/03 to be published in 2006.

Nottinghamshire

Colwick Wildlife. Publication ceased after 2002.

The Lound Bird Report. In abeyance since 2001.

King's Mill Reservoir Bird Report. Publication probably ceased after 2002; no contact could be made.

Wildlife Report for Attenborough Nature Reserve. Report for 2001/02/03/04 published in 2005.

Report of the Pleasley Pit Nature Study Group. Publication probably ceased after 2002; no contact could be made.

Somerset

**The Burnham-on-Sea & Berrow Bird Report*. Private (P. Gay & A. M. Slade); 2004–; e-mail slades@seaside7.freeserve.co.uk

Staffordshire

Belvide Report. Last published for 2002, but continues.
Westport Lake Report. Publication ceased after 2002.

The Birds of Sheepwash Urban Park. Publication probably ceased after 2002; no contact could be made.

Suffolk

Trimley Marshes Wetland Reserve Report. Last appeared in 2001; a five-year summary is planned.

Surrey

Surrey Bird Report. First dates should read: '[1934–47]'. Report for 2001 published 2006.

The Unstead Bird & Wildlife Report. In abeyance after 2000.

Sussex

Sussex Bird Report. First dates should read: '[1934–47]'.
Annual Report of the Rye Harbour LNR Management Committee. A report for 2000/01/02/03/04/05 will be published in 2006.

Warwickshire

Ladywalk Annual Report. Publication ceased after 2002.

Worcestershire

Lutley Wedge Bird Report. Publication ceased after 2002.

**Birds on the Malvern Hills and Commons*. Malvern Hills Bird Group; published under this title 1984–95; revived for 2002 as *Birds of the Malvern Hills and Surrounding Areas*; from 2003 as *Birds Around the Malverns*; David Cunliffe: tel. (01684) 310752.

Yorkshire

Yorkshire Bird Report. Last published for 1997; a seven-year summary is now planned.

VC 62 (NE)

Annual Report of the York Ornithological Club. Report for 2002 published 2005; report for 2003 in prep.

Whitby Bird Report. In abeyance after 2001.

**New Earswick and West Huntington Bird Report*. Private (P. N. Thorpe); 2000–; tel. (01904) 620094.

VC 63 (S & SW)

Barnsley Area Bird Report. Last published in 2000; reports for 2001/02 and 2003/04 in prep.

Old Moor & Broomhill Ings Bird Report. Publication ceased after 2002; no contact could be made.

Annual Report of the Five Towns Bird Group. Publication ceased after 1999.

The Birds of SK58. In abeyance since 2000.

Hatfield Moors Bird Report. None known after 2002; no contact could be made.

VC 64 (W)

**Cononley Ornithological Group Annual Report*. 2002–; area within squares SD 9750/9744, SE 0250/0244; Michael Smith: tel. (01535) 633953, e-mail michaelsmith003@aol.com

**Birds of Clapham*. Private (T. Hutchinson); published for 2005, but may not continue; tel. (01524) 251031.

WALES

Carmarthenshire

Carmarthenshire Birds. In 2003, retitled *Carmarthenshire Bird Report*.

Montgomeryshire

Montgomeryshire Bird Report. Publication ceased after 1999.

SCOTLAND

Argyll

Argyll Bird Report. 2002/03 to be published as one report; series will be resumed.

**Sanda Island Bird Observatory and Field Station Trust Report*. 2002–04–; Rab Morton: tel. (07979) 013954, e-mail Rabmorton@hotmail.com

**Mull Bird Report and Species List*. 2003–; Alan Spellman: tel. (01680) 812448, e-mail mullbirds@btinternet.com

Borders

Borders Bird Report. Report for 2001/02 published 2003.

Caithness

Caithness Bird Report. Not published since 1997; important records from 2004 onwards to be published in separate section of *Highland Bird Report*.

Clyde

Clyde Birds. Reports for 2001 and 2002 published, latter in 2006.

Lochwinnoch NR Bird Report. Publication ceased after 1999.

Dumfries & Galloway

Birds in Dumfries & Galloway. Publication ceased after 2001; currently in abeyance.

Outer Hebrides

Outer Hebrides Bird Report. Report for 2002 published; report covering 2003/04 in prep.

CHANNEL ISLANDS

Alderney

Alderney Society Ornithology Report. Now appears in *Bulletin of the Alderney Society*, currently up to date; Mark Atkinson: e-mail atkinson@cwgsy.net

REPUBLIC OF IRELAND

Most reports are produced by BirdWatch Ireland; tel. (00) 353 1 2819878, e-mail info@birdwatchireland.org

Co. Cork

Cape Clear Bird Observatory Report. In abeyance since 1999.

Cork Bird Report. A restart is planned.

Cos. Dublin, Louth, Meath & Wicklow

Irish East Coast Bird Report. Report for 1998 published 2005, 2000 in 2003 and 2001 in 2004.

Cos. Galway, Laois, Longford, Offaly, Roscommon, Tipperary & Westmeath

Birds in Central Ireland: Mid-Shannon Bird Report. BirdWatch Ireland; 2000/01/02/03 published 2005.

David K. Ballance

Flat Two, Dunboyne, Bratton Lane, Minehead, Somerset TA24 8SQ; tel. (01643) 706820

Co. Kerry

The Dingle Peninsula Bird Report. Report for 2002/03/04 published 2005.

Acknowledgments

I am grateful to the SOC (David Clugston) and BirdWatch Ireland (Stephen Newton) who have provided me with updated details for their respective recording regions. I am greatly indebted to Martin Lambert of Doncaster Museum for Yorkshire information, and to Judith Smith (Greater Manchester) for news from that area.

Reference

Ballance, D. K. 2004. County and local bird reports in Britain and Ireland. *Brit. Birds* 97: 76–91.

Reviews

**WADERS OF EUROPE, ASIA
AND NORTH AMERICA**

By Stephen Message and Don Taylor. Christopher Helm, A&C Black, London, 2005. 224 pages; 80 colour plates. ISBN 0-7136-5290-X. Paperback, £24.99.

As a passionate shorebird enthusiast I always welcome a new book on waders, and I was not disappointed by this one. The geographical area of the title is somewhat optimistic since, in this case, 'Asia' does not include the Indian sub-continent or Southeast Asia. Effectively, the area it covers is the Holarctic, but since vagrant waders from further south that have occurred in the Holarctic are included, it does cover the majority of the waders of the northern hemisphere. The back cover claims that it is a 'guide to the 124 species of northern hemisphere waders', but this total does not include about a further eight species and distinctive subspecies that are mainly Indian and Southeast Asian endemics.

The book is essentially divided into two parts, the first illustrating and describing the main plumages of waders on the ground, accompa-

nied by succinct text which draws attention to key identification features, behaviour, habitat, the various plumages, racial variation where appropriate to the area covered by the book, and brief discussion of possible confusion species. The second half of the book concentrates on waders in flight, with the upper- and lower-wing flight patterns illustrated. This section also includes distribution accounts and distribution maps, the latter showing both hemispheres where appropriate. The cross-referencing between the two sections is good, and my initial distaste for this arrangement rapidly disappeared.

The illustrations are excellent and, for each species, typically show juvenile, non-breeding and breeding individuals. For good measure an example of an individual moulting either into or out of breeding plumage is also often included. The illustrations nicely catch the jizz of the various species, though there is a tendency for some to look rather more 'scaly' than they often appear in the field. Occasionally the illustrations do not quite catch the bird, but these faults are usually subtleties of head shape or bill length (with a tendency for bill length to be rather

short). For example, the Stone-curlew *Burhinus oedipnemus* is given a high, rounded crown, instead of one which is rather flat and square; and surely female Eurasian Curlew *Numenius arquata* of the eastern form *orientalis* has a rather longer bill? The subtle but useful differences in bill and forehead shape of the two races of Black-tailed Godwit *Limosa limosa* are not well shown, nor are they mentioned in the text. Other points include the rather too bright-red leg and bill colour of Three-banded Plover *Charadrius tricollaris*, and, to my eye, the far-too-dark upperparts of Snowy Plover *C. alexandrinus nivosus*, particularly for the very pale, pearly grey individuals that occur around the Gulf of Mexico. But these points are minor, and certainly do not detract significantly from the book.

There are other minor errors: [Eurasian] Oystercatcher *Haematopus ostralegus* is not a vagrant to Japan, but winters regularly in small numbers; the nominate race of Willet *Catoptrophorus semipalmatus*, which breeds in eastern USA and north to Nova Scotia, Canada, does not winter in North America, but further south. And, while on the subject of the

two races of Willet, those who, like me, are challenged to separate them will not find much guidance here! Another point is that the illustration of the foot of Semipalmated Sandpiper *Calidris pusilla* shown on page 17 is, in fact, that of a Semipalmated Plover *Charadrius semipalmatus*.

The treatment of subspecies is rather mixed. For example, we are told that six races of Common

Redshank *Tringa totanus* are recognised (perhaps following HBW?) but only *totanus* and *robusta* are mentioned and illustrated; moreover the text describing the racial distribution mentions only *robusta*! All six races are, however, listed in an appendix giving a useful checklist of the species covered.

But enough of the nit-picking. This is a useful field guide to the majority of the wader species in

the northern hemisphere. It does not pretend to replace Hayman, Prater and Marchant's *Shorebirds: an identification guide to the waders of the world* but, particularly for the travelling wader buff, its usability and compact dimensions make it a practical alternative.

Richard Chandler

ALBATROSSES AND PETRELS *ACROSS THE WORLD*

By Michael Brooke, illustrated by John Cox. Oxford University Press, Oxford, 2004. 499 pages; 16 colour plates; numerous black-and-white vignettes, photographs and figures.
ISBN 0-19-850125-0.
Hardback, £95.00.

According to the preface, Mike Brooke became fascinated by tubenoses about the same time as I did; he was on Fair Isle to fleyg Northern Fulmars *Fulmarus glacialis*, while I was on Copeland Island learning the perils of stuffing Manx Shearwater *Puffinus puffinus* chicks up my T-shirt – both for ringing purposes. So I bought this book on publication, only my second purchase in the 'Bird Families of the World' series, and gave the review copy away as a present. Re-reading sections for this review, I conclude that I didn't waste my money.

The text is split into two parts, the first comprising ten chapters covering aspects of petrel evolution, ecology and conservation, and the second giving 2–3-page accounts of each of the 79 species of Procellariidae recognised at the time of writing (a last-minute insert covers the rediscovery of New Zealand Storm-petrel *Oceanites maorianus* in 2003). There is also an extensive reference list and a useful appendix summarising aspects of breeding of each species.

The general chapters are well written and full of fascinating facts,

insights and thoughts. The author acknowledged that he drew heavily on John Warham's valuable contributions – *The Petrels: their ecology and breeding systems* (Academic Press, 1990), and *The Behaviour, Population Biology and Physiology of the Petrels* (Academic Press, 1996) – but ably manages to synthesise a wealth of scientific papers into a very readable account. Inevitably, I have a few quibbles. 'The impact of oil pollution on petrels appears slight' may jar with those who have recorded the oiling rate of Fulmars around the North Sea over the past 30 years, while in a section on mammalian predators, Brooke states that 'Arctic Foxes *Alopex lagopus* may have [naturally] visited islands where Fulmar bred' but fails to mention that they were deliberately introduced to the Aleutian Islands in the nineteenth century, with inevitable consequences for local Fulmar populations.

The effort to protect albatrosses and petrels from the depredations of long-line fisheries is now a global conservation story and well covered, but the author rightly suggests that Northern Fulmars are probably the most numerical worldwide victim of long-line fishing, something perhaps not generally known in the UK. Quite coincidentally, I had the book open at page 156 ('Perils for petrels', discussing fisheries) when my neighbour (Secretary of the Shetland Fishermen's Association) came in with photos of a deep-sea gill net, set for monkfish *Lophius* on the edge of the continental shelf west of Shetland, that was full of dead and decomposed Fulmars. Appar-

ently the English/Spanish boats involved had not been cleaning their nets properly before shooting them, and decaying fish had attracted Fulmars, which then got entangled and drowned. In view of declines at colonies (in the UK at least) over the past few years, the statement that the 'apparent continuing health of an already large Fulmar population has acted to subdue concern [over fisheries drownings]' was probably correct at the time of writing, but may need reconsideration.

The species accounts are concise and well researched, but perhaps would have benefited from a 'Conservation Concern' section, separated from the 'Population' section. Of the species I know, they are well covered within the (rather severe) limitations of space. Returning again to Fulmar, there are frustrating statements left hanging: 'Breeding success is related to the North Atlantic Oscillation.' How is it related? 'In an Alaskan population containing birds of all phases, dark birds skipped breeding more often and/or had a lower survival than light birds.' Why? Scott Hatch goes into considerable discussion on the possible reasons for this in his paper in *Condor*, but space simply does not allow Brooke to expand. This begs the question, was it wise to cover all the species of petrel, from the Southern Royal Albatross *Diomedea epomophora* to the Least Storm-petrel *Oceanodroma microsoma*, in one volume given the enormous amount of research than has been done in the past decade? Brooke ruefully alludes to this in the preface. One

frustration the author will be aware of is that a number of cross-references were left as (p. ???), e.g. Jouanin's Petrel *Bulweria fallax* p. 267. This is such a simple thing for a publisher to pick up and correct in a book of this quality.

I do not wish to detract from the author's and illustrator's efforts in making this a book that I am glad I bought. John Cox's plates are both technically superb (plate 4)

**COLLINS FIELD GUIDE:
WILDLIFE SOUNDS OF
BRITAIN AND IRELAND**

By Geoff Sample.
Collins, London, 2006.
95 pages and CD.
ISBN 0-00-720906-1.
£14.99.

This work complements the *Collins Field Guide to Bird Songs and Calls* from the same author, so focuses

and atmospheric (plate 5), but why is more than half a page opposite each plate wasted with numbered silhouettes of the birds? No, if I have a gripe with this book it is with the publishers, their format, and the cost. Albatrosses and petrels are some of the most charismatic birds in the world, and not to include even one colour photo is disappointing (no it's not, it's just plain mean); while after

much more on mammals, amphibians and insects, including recordings of 16 species of Orthoptera (grasshoppers and their allies). The book gives a useful insight into the function, properties and transmission of sound and how to record wildlife, and then goes on to describe the sound given by a range of birds and animals. It is, however, the CD that steals the show. Over 100 species are represented, the quality of the recordings is excel-

lent and they range from the blood-curdling to the bizarre! Whether you wish to sit in the armchair and listen to a fascinating collection of sounds from the natural world or gain a better insight into the identification of Orthoptera or frogs (Ranidae), I can thoroughly recommend this value-for-money production.

Martin Heubeck

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Paul Harvey

**ATLAS: BIRDS OF
MOSCOW CITY AND
THE MOSCOW REGION**

By M. V. Kalyakin & O. V. Voltzit. Pensoft Publishers, Sofia-Moscow, 2006. 372 pages; many colour photographs; distribution maps.
ISBN 952-642-262-2.
Hardback. No price given.

This splendid new atlas covers all 273 breeding, migrant, nomadic and wintering bird species recorded in Moscow City and the Moscow region during 1999–2004. Each species text is accompanied by a map of the Moscow region, showing dots for actual locations of records. If a species also occurs in Moscow City, a second map at a larger scale is given as well; this also plots actual locations of species rather than presence in grid squares. Four different types of dots indicate winter records (mid November to end of February), confirmed breeding during 1999–2004, probable breeding in the same period, and other records. The base map of the Moscow

region shows only rivers, but the city map usefully includes key locations such as parks and ponds. A colour-coded panel also gives typical seasonal occurrence. The authors have succeeded in achieving very good coverage of the region. Records were received from 401 observers, covering 750 localities in Moscow region and 336 localities in Moscow City. Translated to half-degree squares, this equates to 94% coverage for the region as a whole during the six years of fieldwork.

The rather brief text, in both Russian and English, summarises each species' status. Although the maps provide much of the useful information, I felt that the text could have been a bit more informative. The principal reason for the brief text is clearly the photographs, which seem to have taken priority in this lavishly illustrated, large-format book. Over 900 colour photographs have been included, an average of more than three per species. The quality of the photos is generally excellent, and their reproduction is usually very good. Their inclusion will no

doubt enhance the overall appeal of the book and provide a valuable source of reference.

This attractive and useful book will surely be of interest to anyone lucky enough to enjoy Moscow's many ornithological delights. There is more than enough information here to assess the status of every species in Moscow, and even to compile species lists for certain key sites if you wished. Perhaps not surprisingly, while checking various species that I have seen in Moscow, I could have added a few dots to their maps but the compilers have not tried to source records from non-Russian observers. My only minor quibble is that the authors or publishers could surely have picked a more charismatic or typical species for the front cover than Mallard *Anas platyrhynchos*! This book is an important addition to the literature for an area where most of the available references are in Russian, and therefore inaccessible to most birders in the West. Buy it while you have the opportunity.

Nigel Redman

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Natural England's budget slashed before it starts work

England's new conservation agency has been hit by hefty Government spending cuts even before it starts work on 1st October.

The cutbacks are so severe that the Chairman of Natural England, Sir Martin Doughty, has reportedly complained to the Environment Secretary, David Miliband. In a private letter to Mr Miliband, quoted in *The Independent*, Sir Martin says: 'The scale of these cuts risks the wheels coming off the organisation before it even reaches October's launchpad.' A mixed metaphor but the sense of outrage is clear.

Natural England is a merger between English Nature, the Countryside Agency's landscape, access and recreation divisions, and the Rural Development Service. Its brief is to conserve England's natural environment and to encourage access to it. Targets include reversing the long-term decline of farmland birds by 2020 and improving the proportion of

Sites of Special Scientific Interest (SSSIs) that are in a 'favourable' condition (the target is 95% of SSSIs by 2010). However, this vitally important work seems to be threatened by emergency budget cuts implemented by Defra.

In his letter to Mr Miliband, Sir Martin says: 'I am deeply concerned that current financial demands being placed upon us by Defra are eroding our capacity to deliver these benefits before we even begin. I understand the need for Defra to live within its budget and Natural England is committed to playing its part in that – we are already committed to £7 million of cuts. This is on top of nearly £8 million in cuts imposed in December last year. However, Defra has now asked us for an additional £12 million to be obtained in-year from Natural England and our founding bodies. Given that in-year cuts would largely be programme-based rather than staff-based, this equates to a 40%

cut to the remainder of our programme on a pro-rata basis. This comprises a 54% cut to the remaining uncommitted programme.'

Environmental groups are understandably dismayed. Mark Avery, the RSPB's Director of Conservation, said: 'These cuts will put back the recovery prospects for a whole range of species for years. This is meant to be an exciting new agency, but this is a terrible start.'

Among Natural England's fledgling projects is the reintroduction of the Corn Crake *Crex crex* to England. Initial efforts in Cambridgeshire are promising (four calling males returned to Cambridgeshire in spring 2006; see also *Brit. Birds* 97: 548–549) but this project could be one of the casualties of the budget cuts. Another vulnerable project is the proposed reintroduction of the White-tailed Eagle *Haliaeetus albicilla* to Suffolk (*Brit. Birds* 99: 165–166).

Satellite tracking should reveal the Bald facts

Satellite tags have been attached to three of the remaining seven adult Bald Ibises *Geronticus eremita* in Syria, a species thought to be extinct in the region until four years ago. Scientists from BirdLife and the RSPB are tracking the trio's migration after they left their breeding sites near Palmyra, in southeast Syria, on 18th July. Six young ibises were reared in Syria this year; see www.rspb.org.uk/tracking

Paul Buckley, Head of Global Country Programmes at the RSPB, said: 'We know next to nothing about where these birds go but if we can follow their migration and locate their winter home we should find out why their numbers are so low and how we can protect them.

That is the first step towards increasing their numbers again.'

The Bald Ibis was once widespread across the Middle East, northern Africa and the European Alps. It was revered by the Egyptian Pharaohs and had its own Ancient Egyptian hieroglyph. Numbers plunged because of habitat loss, human disturbance and persecution and the species is now classified by BirdLife as Critically Endangered. The Syrian group forms one of only two wild populations of the species in the world. The other is found in Morocco, chiefly in the Souss-Massa National Park, south of Agadir.

After leaving Palmyra, the three ibises travelled together for 2,000

km south into Saudi Arabia in just one week. By the first week of August they had reached Yemen and they may cross the Red Sea to winter in Eritrea. Dr Ken Smith, a senior scientist at the RSPB said: 'Tracking the birds and finding their wintering sites may be the last chance to save them. Helping the mature birds to stay alive is crucial because they teach their young where to migrate to and when to go. The low numbers and difficult terrain in the region make this species particularly difficult to work with but its resilience so far suggests it has a future. Other birds have been brought back from the brink and with the Syrian authorities backing our work we are hopeful that we can save this bird.

Dr Gianluca Serra, Field Team Leader for BirdLife added: 'Not only have we tagged the birds at

last but we now have 13 ibises in Syria after the best breeding season yet. Our chances of saving this bird

now seem more than just a dream.'

Bush-quail back from the dead

A species that had disappeared into the annals of history has returned. The Manipur Bush-quail *Perdica manipurensis* has been seen in India, the first confirmed sighting of this small gamebird for over 70 years.

On 6th June 2006, the Embankment & Drainage Department had to carry out engineering works in and around Manas National Park, a world heritage site in Assam. The team was accompanied by the region's Deputy Commissioner and District Magistrate, Dr Anwaruddin Choudhury, a noted ornithologist, who was present to inspect the works. As access to the park during the monsoon season is notoriously difficult, this was a rare opportunity to enter the area at this time of year.

'Driving was very slow as in places the road was invisible, being

entirely overgrown with tall grass. At 2.30 pm, a quail was flushed which flew in front of our vehicle for about 15 m and dropped into the grass in the middle of the road. I was familiar with flushing quails [Phasianidae], button-quails [Turnicidae] and rails [Rallidae] in the grassland sanctuaries of Assam but the larger size of this bird and its rather slaty-grey colour surprised me,' described Dr Choudhury. 'The bird took off again and flew for another 15 m confirming that it could be only one species – the Manipur Bush-quail. This time it landed in a small clearing made by the wheels of the vehicles, where it paused for about three to four seconds, giving me enough time to see its side view with contrasting grey and buff colour. I did not get a chance to study the head pattern to determine its sex.'

Despite searches being made along the track later that day, no more quails were seen and further visits to the site will not be possible until the autumn because of the monsoon conditions.

The last authentic records of Manipur Bush-quail from Assam were from Mornoi, Goalpara, where birds were obtained for various collections in 1905–07. The last confirmed record of the species in its entire range was 'pre-1932' in Manipur Valley, according to J. C. Higgins, civil servant and ornithologist, although unconfirmed sightings were reported in 1998 and 2004. As Ed Parnell of BirdLife observed, this exciting find may bode well for other 'vanished' Indian species, such as the Himalayan Quail *Ophrysia superciliosa*, which has not been recorded since 1876.

The Goose and Swan Monitoring Programme

The UK's wetland habitats support over five million waterbirds during winter and migration periods every year. Holding such an abundance of waterbirds brings with it the responsibility to safeguard both birds and their habitats, and for the UK this responsibility is particularly high as a number of populations winter entirely, or almost entirely, within its borders – for example, the Svalbard Barnacle Goose *Branta leucopsis*, which breeds in Svalbard and winters on the Solway Firth, and the Icelandic Pink-footed Goose *Anser brachyrhynchus*, which migrates from Iceland and Greenland to overwinter in Scotland and England.

During the non-breeding season, the UK supports three swan and six goose species, totalling 16 different populations: more goose populations than any other country in Europe. Regular assessment of the status of these

important populations (whether they are increasing, decreasing or stable) and the factors that affect change is essential for effective conservation. Monitoring numbers and other key demographic parameters such as productivity and survival are therefore fundamental to this process. Understanding how these demographic factors affect abundance helps to identify where conservation action should be targeted, for example on the breeding or wintering grounds, and where potential problems may arise that could result in declining numbers; they also allow us to identify key sites that need protection.

Most birders will be familiar with the Wetland Bird Survey (WeBS) but fewer may be aware of other waterbird monitoring schemes in the UK, such as the Goose and Swan Monitoring Programme (GSMP). Though WeBS provides baseline information on the abundance and distribution of

many wintering waterbirds, it is not particularly suitable for monitoring most geese and swans, which are found away from wetland areas during the daytime, when WeBS counts are conducted. The GSMP comprises a suite of specially designed surveys that measure the abundance and distribution of the UK's wintering goose and swan populations accurately, as well as other surveys that provide information on productivity, survival and movements.

The effectiveness of monitoring and conservation action is greatly enhanced by collaboration of organisations and individuals from all countries throughout the range (flyway) of a population. Most GSMP surveys are co-ordinated at a flyway scale and therefore provide thorough assessments of population status at the most biologically meaningful scale.

Without such flyway-wide monitoring, the recent decline of

the Greenland White-fronted Goose *Anser albifrons flavirostris* may have gone unnoticed, and the subsequent actions taken to safeguard this population may never have occurred, or have been harder to justify (see *Brit. Birds* 99: 242–261, 381). Although the additional protection conferred as a result of the hunting ban on Greenland White-fronts in Iceland will undoubtedly help this population, monitoring of productivity has shown that poor breeding success is the key factor influencing the recent decline. Therefore, it is

essential that monitoring activities continue if we are to both assess the effectiveness of additional protection in Iceland and understand more about the influence of poor breeding success on the decline.

If you are interested in supporting waterbird conservation and helping to ensure that the UK's important goose and swan populations are maintained, and are able to spend some time counting birds or recording ring numbers, please consider taking part in a GSMP survey. Most are in need of new observers and getting involved is

simple. The leaflet enclosed with this issue of *BB* explains more about the GSMP. For further information see the WWT website (www.wwt.org.uk/research/monitoring/), where you will find a complete list of GSMP surveys, copies of past newsletters and census reports and information on WWT's Waterbird Monitoring Programme. If you would like further copies of the leaflet, please contact the Waterbird Monitoring Unit at WWT Slimbridge.

(Contributed by Colette Hall)

Red-letter day for Red Kites

Against all the odds, a pair of Red Kites *Milvus milvus* has nested in Gateshead alongside a busy public thoroughfare, the first nesting record in northern England for 200 years and a triumph for the *Northern Kites* reintroduction scheme that started just two years ago.

It was the coldest, wettest May for a decade, the parent birds were inexperienced youngsters just two years old, they chose a very public nest-site and yet... the nest beside the Nine Arches viaduct on the Derwent Walk has become a hugely popular wildlife spectacle for the

people of northeast England.

The last English Nature reintroduction scheme for Red Kites was launched in 2004, with the release of 20 young birds taken as nestlings from the booming population in the Chilterns. In 2005, a further 41 birds were released and this year a further 32 birds were liberated in Tyne & Wear. The birds have shown great fidelity to the Derwent Valley just two miles from the MetroCentre, Europe's largest shopping centre, and are already a tourist attraction at their winter roost and now at the nest. Gateshead Council has paid

£250,000 to support the *Northern Kites* project and organised the six-week public watchpoint that provided alternative entertainment during the World Cup.

And in Shropshire, the county's first young Red Kites for 130 years have fledged. The parents are almost certainly birds from Wales, and it is particularly fitting that native birds have recolonised Shropshire: the last successful nest, near Ludlow in 1876, was the last known instance of breeding by kites before they became extinct in England as a result of sustained persecution.

An abundance of pipefish

Since 2003, fishery surveys have recorded dramatically increased numbers of Snake Pipefish *Entelurus aequoreus* in the North Sea and the northeast Atlantic and show that the status of the species around Britain has changed from rare to abundant. Over the same period, Snake Pipefish have also started to be recorded in the diet of many species of seabird at colonies from northern England to Norway. However, the circumstances in which they have been reported have been rather depressing. Snake Pipefish are long, thin, scaly and rather stiff, and birds, particularly chicks, have difficulty swallowing them (*Brit. Birds* 99: 148). Records



261. A moribund young Kittiwake *Rissa tridactyla* surrounded by at least 50 Snake Pipefish *Entelurus aequoreus* brought by its parents over a 24-hour period; Isle of May, Fife, July 2006.

Mark Newell

coming in for 2006 indicate that the situation has been even more extreme, with increased numbers of Snake Pipefish recorded in fish surveys and at seabird colonies. Mark Newell, studying the diet of seabirds on the Isle of May, in the Firth of Forth, for the Centre for Ecology and Hydrology, noted Kittiwakes *Rissa tridactyla* regurgitating pipefish onto nests even before eggs were laid. Numbers then increased

to reach staggering proportions by the late-chick period, with some nests containing many tens, if not hundreds, of undigested fish, 30–40 cm long. By this time it was obvious that breeding Kittiwakes were struggling, with well over half of all broods being left unattended. Many chicks died, despite being surrounded by masses of pipefish that they appeared unable or unwilling to swallow. Prof. Mike Harris

(mph@ceh.ac.uk) remarked: 'This is the most profound change in seabird diet that I have seen in the 35 years that I have been studying seabirds at this colony. It appears that these birds were having difficulty in obtaining small sandeels *Ammodytes*, their normal prey, and were turning to this new source. I wonder when they will learn that these fish are just not suitable for chicks.'

Cornish Choughs doing well

A second pair of Red-billed Choughs *Pyrrhocorax pyrrhocorax* has bred successfully in Cornwall. Choughs returned to Cornwall in 2001, after a long absence (see *Brit. Birds* 96: 23–29; since then, the now-famous pair on the Lizard has bred successfully each year, but this year, after much anticipation, a second pair has raised young.

The new pair comprised a Cornish-bred male from the 2004

Lizard brood, and a female that arrived in the county two years ago. This pair raised three chicks, two male and one female, while the original pair fledged five chicks this year. Their three males and two females bring their total offspring to 20 over five seasons.

Based on studies in Wales, researchers had estimated that there would be two breeding pairs of Choughs in Cornwall by 2006 or

2007, so the birds are on course to re-establish a viable population in the county.

All of this year's chicks have been fitted with colour rings so that their progress can be monitored. Sightings of colour-ringed birds should be reported to RSPB Chough Project Officer, Claire Mucklow: e-mail Claire.Mucklow@rspb.org.uk; tel. 01392 453775.

Scotland's White-tailed Eagles reach double century

After 21 years of tireless work by conservation groups, volunteers, the police, local communities and landowners, the 200th wild-bred White-tailed Eagle *Haliaeetus albicilla* chick has fledged on the Isle of Skye. The first flight of the chick, one of a brood of three – the first triplets ever recorded on Skye – was captured on wildlife CCTV

cameras at the RSPB Scotland viewing area at the Aros Centre near Portree. The joy of watching the 200th Scottish Sea Eagle chick to fledge was tempered with the news that the youngest of the brood had become a casualty of the summer storms leading up to mid-summer's day. White-tailed Eagles settled on Mull and Skye soon after

their initial reintroduction to Rum in 1975, with the first pair on Skye attempting to breed in 1987. The island is now home to a quarter of Scotland's White-tailed Eagles and is one of the best places in Scotland to see this magnificent raptor in its natural habitat.

Request

Sightings of colour-ringed 'alba' wagtails

During autumn 2005, over 500 White/Pied Wagtails *Motacilla alba alba/yarelli* were colour-marked at Slapton Ley NNR, Devon, as part of an intensive study investigating the origins of the many thousands of wagtails (currently estimated at 30,000–50,000) passing through en route to France and Spain. Each bird carries a total of four rings, a BTO metal ring on the right leg

and three coloured rings on the left leg.

Over 2,500 birds have been ringed at Slapton since October 2002, which have generated recoveries from Scotland, Wales, The Netherlands and France. In addition, there has been extensive co-operation with Icelandic birders/ringers as part of this latest study, which suggests that c. 60%

of birds passing through Slapton during September are White Wagtails and that probably most are of Icelandic origin.

All sightings are required and will be acknowledged. Please send details to: Dennis Elphick, 2 Somerye, Chillington, Kingsbridge, Devon TQ7 2JU; e-mail dennis.elphick@tiscali.co.uk; tel. (01548) 580323.

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mid July to mid August 2006.

Ferruginous Duck *Aythya nyroca* Loch Gelly (Fife), 16th July to 7th August. Lesser Scaup *Aythya affinis* Hornsea Mere (East Yorkshire), 10th July.

Zino's/Fea's Petrel *Pterodroma madeiralfeae* Brandon Point (Co. Kerry), 31st July. Cory's Shearwater *Calonectris diomedea* On 30th July,

over 975 were seen off Galley Head, 76 off Cape Clear, 70 off Power Head and 50 off Ballycotton (all Co. Cork); the following day 40+ were seen off Cape Clear, 11 past Ballycotton and 10 past Galley Head. Great Shearwater *Puffinus gravis* Peak counts were 20+ past Galley Head on 30th July, and 20 off Brandon Point, on 1st August. Wilson's Storm-petrel *Oceanites oceanicus* Seen from pelagic trips out of Scilly on the following dates: 12th July (two), 13th July, 17th July, 18th July (two), 19th July, 20th July, 24th July (three),

Robin Chittenden (www.harlequinpictures.co.uk)



262. Eurasian Spoonbills *Platalea leucorodia*, Cley, Norfolk, July 2006.

Hugh Harrop



263. Adult White-rumped Sandpipers *Calidris fuscicollis*, Pool of Virkie, Shetland, July 2006.

28th July, 31st July (eight), 3rd August and 6th August (two). Others were reported from a boat off Castletownbearhaven (Co. Cork) in mid July and off Galley Head on 22nd July.

White Pelican *Pelecanus onocrotalus* One, of unknown origin, over Sundridge, 29th July, presumed same Bough Beech Reservoir (both Kent), 30th July to 7th August. Night Heron *Nycticorax nycticorax* Polmorla (Cornwall), 30th July. Cattle Egret *Bubulcus ibis* Grove Ferry/Stodmarsh area (Kent), 23rd July to 7th August. Great White Egret *Ardea alba* Rainham Marshes (London), 17th July; Lofts Farm Gravel-pits, 20th–22nd July, also at Chigborough Lakes, 22nd–23rd July and 31st July to 7th August, presumed same Old Hall Marshes (all Essex), 23rd–24th July; Bardsey (Gwynedd), 26th July; Blashford Lakes (Hampshire), two long-stayers to 25th July at least, with presumably one of same at Alderholt, 14th July and Sturminster Marshes (both Dorset), 20th July. Black Stork *Ciconia nigra* Long-stayer seen at various localities in Borders to 23rd July, with probably the same over Blyth (Northumberland), on 23rd July; Uckfield (East Sussex), 27th July.

Red-footed Falcon *Falco vesperinus* Moorgreen Lakes (Berkshire), 15th–16th July; Abberton Reservoir (Essex), 16th July; Otmoor (Oxfordshire), 14th July; Holland Haven (Essex), 30th July.

White-rumped Sandpiper *Calidris fuscicollis* Pool of Virkie (Shetland), 22nd–26th July, with two on 24th–26th; Seaton Snook (Cleveland), 26th–31st July, with two on 31st July and one on 4th August; North Ronaldsay (Orkney), 31st July to 1st August. Stilt Sandpiper *Calidris himantopus* Conwy RSPB reserve (Conwy), 11th–13th July. Buff-breasted



Paul Hackett

264. Adult White-rumped Sandpiper *Calidris fuscicollis*, Seaton Snook, Cleveland, July 2006.

Sandpiper *Tryngites subruficollis* Hickling Broad (Norfolk), 24th July; Tacumshin (Co. Wexford), 5th–6th August. Long-billed Dowitcher *Limnodromus scolopaceus* Gibraltar Point (Lincolnshire), 22nd July to 7th August; Shannon Airport lagoons (Co. Clare), 28th July to at least 1st August. Marsh Sandpiper *Tringa stagnatilis* Pagham Harbour (West Sussex), 29th July to 4th August. Lesser Yellowlegs *Tringa flavipes* Old Hall Marshes, 23rd July; long-stayer, Gibraltar Point, 20th July to 6th August.



Graham Cateley

265. Adult 'Caspian Gull' *Larus (argentatus) cachinaans*, Barton-on-Humber, Lincolnshire, July 2006.



266 & 267. First-summer 'American Black Tern' *Chlidonias niger surinamensis*, Lady's Island Lake, Co. Wexford, July 2006.

Laughing Gull *Larus atricilla* Buchan Alpha oil platform, 200 km northeast of Aberdeen, 11th July; Arlington Reservoir (East Sussex), 11th–23rd July; Dawlish Warren (Devon), 5th August. Franklin's Gull *Larus pipixcan* Grunty Fen (Cambridgeshire), 29th July; Whitehouse Lagoon (Co. Antrim), 5th–6th August. Caspian Tern *Hydroprogne caspia* Breydon Water (Norfolk), 15th July; London Wetland Centre (London), 17th July. 'American Black Tern' *Chlidonias niger surinamensis* Lady's Island Lake/Carnsore Point (Co. Wexford), 16th July to 1st August. White-winged Black Tern *Chlidonias leucopterus* North Bull Island and Sandymount Strand (Co. Dublin), 22nd July; Covenham

Reservoir (Lincolnshire), 4th August; Big Waters (Northumberland), 6th August; Hornsea Mere, 7th August; Filey Brigg (North Yorkshire), 7th August. Forster's Tern *Sterna forsteri* Lady's Island Lake, 22nd July.

Pallid Swift *Apus pallidus* Bryher (Scilly), 23rd July. European Bee-eater *Merops apiaster* Pitcox (Lothian), 18th July; Trunch (Norfolk), 29th July; Wester Quarff (Shetland), 4th August. Greenish Warbler *Phylloscopus trochiloides* Cresswell Pond (Northumberland), 6th August. Woodchat Shrike *Lanius senator* Friskney (Lincolnshire), 29th July to 7th August. Rose-coloured Starling *Sturnus roseus* Unst (Shetland), 13th July to 6th August; Skibbereen (Co. Cork), 6th August. Pine Grosbeak *Pinicola enucleator* Gilston Park (Hertfordshire), from 8th July, same as that earlier in Essex, and subsequently known to have escaped from captivity.



268. Male Red-backed Shrike *Lanius collurio*, Croxley Common Moor, Hertfordshire, July 2006.



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English and scientific names and sequence of birds should follow The '*British Birds*' List of Birds of the Western Palearctic (1997), with amendments as detailed in *Brit. Birds* 97: 2-5 and listed on the BB website at: www.britishbirds.co.uk/bblist.htm or, for non-West Palearctic species, Dickinson (2003), *The Howard and Moore Complete Checklist of the Birds of the World*. Names of plants should follow Stace (1999), *Field Flora of the British Isles*. Names of mammals should follow Corbet & Harris (1991), *The Handbook of British Mammals*, 3rd edition. Topographical (plumage and structure) and ageing terminology should follow editorial recommendations (*Brit. Birds* 74: 239-242; 78: 419-427; 80: 502).

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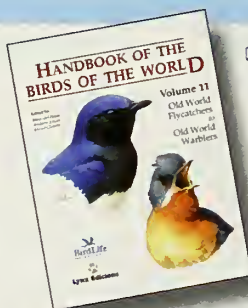
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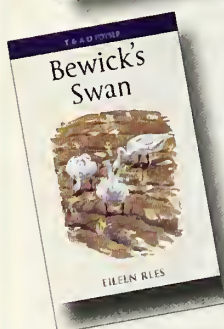
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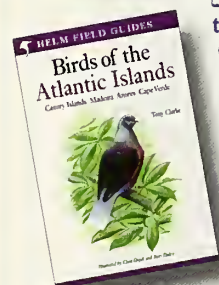
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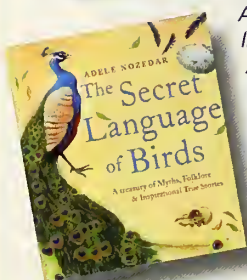
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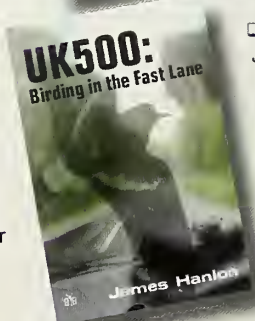
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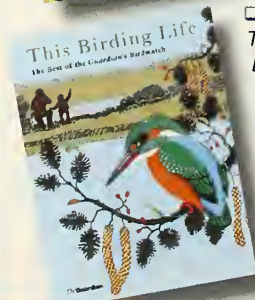
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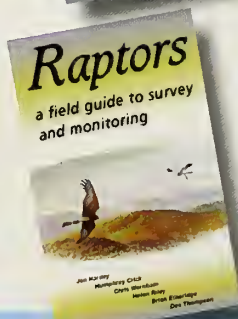
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Gray's Grasshopper Warbler

Siberian Blue Robin

Drinking and bathing by garden



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Occurrences of Gray's Grasshopper Warbler in Europe, including a further case of Meinertzhagen fraud

Peter R. Kennerley and Robert P. Prÿs-Jones

ABSTRACT Gray's Grasshopper Warbler *Locustella fasciolata* has been recorded in western Europe on just three occasions; in each case, the bird struck a lighthouse and the specimen has been preserved. Two records, on Île d'Ouessant, France, on 26th September 1913, and at Lodbjerg, Denmark, on 25th September 1955, involved first-winter birds and fall within the established pattern of autumn vagrancy by Asian passerines. The third, an adult, was supposedly obtained by Richard Meinertzhagen from Île d'Ouessant on 17th September 1933. This specimen was subsequently reidentified and the record published in *BWP* as referring to a juvenile of the insular form *L. f. amnicola*.

However, subsequent examination of plumage characters and biometrics has clearly established that it belongs with the nominate form rather than *L. f. amnicola*. Being in fresh plumage, this specimen could not have been collected in September, and external and X-ray examination has revealed that the style of preparation closely matches that of a series collected by Owston in northeast China in June 1908, one of which was missing from the collection at the Natural History Museum, Tring. It is concluded that the Meinertzhagen bird is the missing Owston specimen, which was removed from the NHM collection, extensively remade and relabelled with misleading information. Consequently, this specimen should no longer be considered to represent a genuine vagrant to Europe, or quoted in support of the occurrence of other extreme vagrants to Europe that originate in eastern Asia.

Gray's Grasshopper Warbler *Locustella fasciolata* remains one of the most exceptional vagrants to reach western Europe from Siberia, having been recorded on just three occasions. All three occurrences involved a bird

which purportedly died after colliding with a lighthouse and all three specimens have been preserved, enabling the correct identification and age class to be established. Details of these three records are summarised as follows.

Île d'Ouessant, 26th September 1913

The first European record concerned a first-winter female at Île d'Ouessant, Finistère, France, on 26th September 1913 (Ingram 1926). Although the bird was initially identified as a Great Reed Warbler *Acrocephalus arundinaceus*, the mistake was later realised and corrected (Ingram 1930). This specimen is now held at the Natural History Museum (NHM), Tring, specimen registration No. 1929.10.7.1.

Île d'Ouessant, 17th September 1933

The second European record was also on Île d'Ouessant, on 17th September 1933 (Meinertzhagen 1948). Allegedly, this individual was also misidentified initially as *A. arundinaceus*, being identified correctly 'some weeks later' (Meinertzhagen 1948, p. 559). The specimen is preserved at the NHM, specimen registration No. 1965.M.13490.

Strangely, Meinertzhagen made no mention of this record in his account of the 1933 autumn migration on Île d'Ouessant, which he presented as a talk less than a month later and which had been published within two months (Meinertzhagen 1933). In this paper, he stated explicitly that among migrants he would 'mention the rarer observations' (Meinertzhagen 1933, p. 7), which included species such as Tawny Pipit *Anthus campestris*, Melodious Warbler *Hippolais polyglotta* and Firecrest *Regulus ignicapilla*. Whether identified at this point as Gray's Grasshopper Warbler or as Great Reed Warbler, specimen 1965.M.13490 should clearly also have come within this category, but the only reference to either species concerned a note of Ingram's 1913 specimen of the former.

Lodbjerg, 25th September 1955

The third record involved a first-winter female at Lodbjerg, Nord-

jylland, Denmark, on 25th September 1955 (Salomonsen 1963; Dybbro 1978). This specimen is held in the collection of the Zoological Museum, University of Copenhagen (ZMUC), Denmark, specimen registration No. Tv.J.: 23-2-1960-24. This record has not been particularly well documented and the full text (in translation) from Salomonsen reads: 'Denmark: Accidental; Lodbjerg Lighthouse, Thisted County, 25 Sept. 1955. Juv. female; fallen at the lighthouse.' Dybbro adds nothing further, stating (in



269. Underparts of Gray's Grasshopper Warblers *Locustella fasciolata* collected in Europe. NHM, Tring, specimen reference No. 1929.10.7.1, collected at Île d'Ouessant, Finistère, France, on 26th September 1913 (top); NHM, Tring, specimen reference No. 1965.M.13490, collected at Île d'Ouessant, Finistère, France, on 17th September 1933 (centre); Zoological Museum, University of Copenhagen, specimen reference Tv.J.: 23-2-1960-24, collected at Lodbjerg, Nordjylland, Denmark, on 25th September 1955 (bottom).



270. Upperparts of Gray's Grasshopper Warblers *Locustella fasciolata* collected in Europe. NHM, Tring, specimen reference No. 1929.10.7.1, collected at Île d'Ouessant, Finistère, France, on 26th September 1913 (top); NHM, Tring, specimen reference No. 1965.M.13490, collected at Île d'Ouessant, Finistère, France, on 17th September 1933 (centre); Zoological Museum, University of Copenhagen, specimen reference Tv.J.: 23-2-1960-24, collected at Lodbjerg, Nordjylland, Denmark, on 25th September 1955 (bottom).

Peter Kennerley © NHM, Tring & ZMUC

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translation) 'Very rare, sporadic migrant visitor. One record (killed at lighthouse): Lodbjerg Fyr (NJ) 25th Sept. 1955. Juv ♀. Migrant visitor from Siberia.' Like the 1913 record, it was initially misidentified, this time as a River Warbler *L. fluviatilis*, and it still carries the original label bearing this (mis)identification, as well as two labels naming it correctly as *L. fasciolata*.

Plates 269 & 270 illustrate the three European specimens of Gray's Grasshopper Warbler together. The bird recorded in September 1913 is clearly in first-winter plumage, as it has conspicuous sulphur-yellow underparts and a fault bar extending across the tail. Similarly, the bird from September 1955 is also readily aged as a first-winter, owing to its sulphur-yellow underparts, distinct dark fringes to the sides of the throat and upper breast, and slightly worn primaries and rectrices.

The third individual, referred to hereafter as 'the Meinertzhagen specimen', from Île d'Ouessant in September 1933, differs from the other two specimens in lacking the sulphur-yellow wash to the underparts; instead, the breast and upper flanks are washed mid grey while the belly is mostly white. It is also in fresh, unworn plumage, unlike the other two specimens, which show slight wear on the remiges and rectrices.

Meinertzhagen (1948) does not discuss the age of the bird, although Williamson (1968) considered it to be an adult in fresh plumage after examining the specimen. Williamson presumably reached this conclusion after comparing it with other specimens in the NHM; young birds in this collection invariably show strong sulphur-yellow tones on the underparts, whereas adults are washed grey across the breast, have a white belly and warm fulvous-brown flanks and ventral region.

Subsequent to Williamson's examination, Stepanyan (1972, 1973) described the birds inhabiting Sakhalin and the Kuril Islands, Russia, and Hokkaido, Japan, as a distinct species *Locustella amnicola* (monotypic), closely related to *L. fasciolata*. Some authorities, including Clements (2000), still treat *amnicola* as a distinct species, 'Stepanyan's Grasshopper Warbler', based on differences in plumage, biometrics and wing structure. It is not widely recognised as a separate species, however, and many other authorities, including Neufeldt & Netschajew (1977) and Dickinson (2003), consider it to be a race of *L. fasciolata*. Birds showing intermediate plumage characters

between nominate *fasciolata* and *amnicola* breed in the Russian Far East, suggesting that the continued taxonomic arrangement of *amnicola* as a race of Gray's Grasshopper Warbler should be maintained until detailed comparison of vocalisations and molecular phylogeny confirm otherwise.

Although Williamson (1968) believed the Meinertzhagen specimen to be an adult, one of the characters cited by Stepanyan by which *amnicola* differed from *fasciolata* was in the colour of the underparts of juveniles and first-winters. Stepanyan considered that young *amnicola* lacked the sulphur-yellow wash to the underparts, which instead appeared greyish and were tinged to a variable extent with buff on the breast and flanks, while the belly was paler. It was presumably this description, translated from the original Russian literature, which led Roselaar (in Cramp 1992) to form the opinion that the Meinertzhagen specimen matched Stepanyan's description of juvenile *amnicola*.

The Meinertzhagen specimen has subsequently been cited on a number of occasions as belonging with *amnicola* (e.g. Cramp 1992, Verbeelen & De Smit 2003, van Bemmelen & Groenendijk 2004). As a result, this record (comprising a bird with a breeding range in eastern Asia) has been used as supporting evidence for the occurrence in Europe of other extreme vagrants from eastern Siberia east of the Lake Baikal watershed.

Distribution and the likelihood of vagrancy

Vagrancy to western Europe by passerines, and by warblers in particular, originating from breeding areas to the east of the Ural Mountains, Russia, is a well-established autumn phenomenon (e.g. Cottridge & Vinicombe 1996). Almost all passerines of Siberian origin that reach Europe have breeding ranges that extend well to the west of Lake Baikal, encompassing the Ob and Yenisey River basins. As Gray's Grasshopper Warbler has a breeding range that reaches into the heart of this region (fig. 1), it would be expected to occur as a European vagrant; in fact, it seems surprising that it has occurred so infrequently. Of the species to have occurred as vagrants to western Europe at the time of writing, only Eastern Crowned Warbler *Phylloscopus coronatus*, Dark-throated Thrush *Turdus ruficollis* of the red-throated form *ruficollis* and Daurian Starling *Sturnus sturninus* have the western limits of their breeding distri-

bution to the east of this region, although all breed in Siberia, well to the west of the Sea of Okhotsk.

As a breeding bird, however, the *amnicola* race of Gray's Grasshopper Warbler is restricted to islands bordering the southern sector of the Sea of Okhotsk, including Sakhalin and Hokkaido and the southern Kuril Islands (fig. 1). It has not been recorded reliably on migration anywhere away from Japan, and the wintering area remains unknown (but is believed to lie within that of nominate *fasciolata*). No other passerines with a distribution restricted to this region of eastern Asia, and wintering east to Papua New Guinea, have been known to occur in Europe. Consequently, the occurrence of *amnicola* in France in mid September would represent one of the most extraordinary feats of avian vagrancy from Asia, comparable with the movements of seabirds such as Aleutian Tern *Onychoprion aleutica*, Ancient Murrelet *Synthliboramphus antiquus* and Long-billed Murrelet *Brachyramphus perdix*.

Almost all warblers that reach Europe in autumn from Siberia have done so in the same calendar-year as fledging, and the occurrence of adults in autumn is extremely unusual. Consequently, the 1913 and 1955 records of Gray's Grasshopper Warbler fall within an established vagrancy pattern – of young birds originating from Siberia – and it seems reasonable to accept that both occurred as the result of natural vagrancy. By contrast, the Meinertzhagen speci-

men, which apparently involved an adult bird in fresh plumage, is distinctly anomalous.

In recent years, however, a better understanding of the field characters and moult strategy of the two forms of Gray's Grasshopper Warbler has emerged, which points clearly to the fact that the Meinertzhagen specimen does not belong with *amnicola*, but is actually a typical adult of the nominate form.

Richard Meinertzhagen

When Williamson (1968) and Roselaar (in Cramp 1992) examined the Meinertzhagen specimen, neither would have been aware of the circumstances or controversy that has subsequently engulfed the provenance of some of the specimens in the collection amassed by Richard Meinertzhagen, which was gifted by him to the NHM in the 1950s. Meinertzhagen was a prolific collector during the first half of the twentieth century. In addition to collecting birds during his extensive travels, Meinertzhagen also developed a propensity to appropriate specimens from the collections of others, notably the NHM collection, relabel them with his own misleading data, including fraudulent dates and locations, and pass these off as being birds that he had collected (Rasmussen & Prŷs-Jones 2003). If the circumstances surrounding the origin of his specimen of Gray's Grasshopper Warbler from Île d'Ouessant are questionable, this clearly affects the authenticity of the record – and if the date and location are uncertain, this

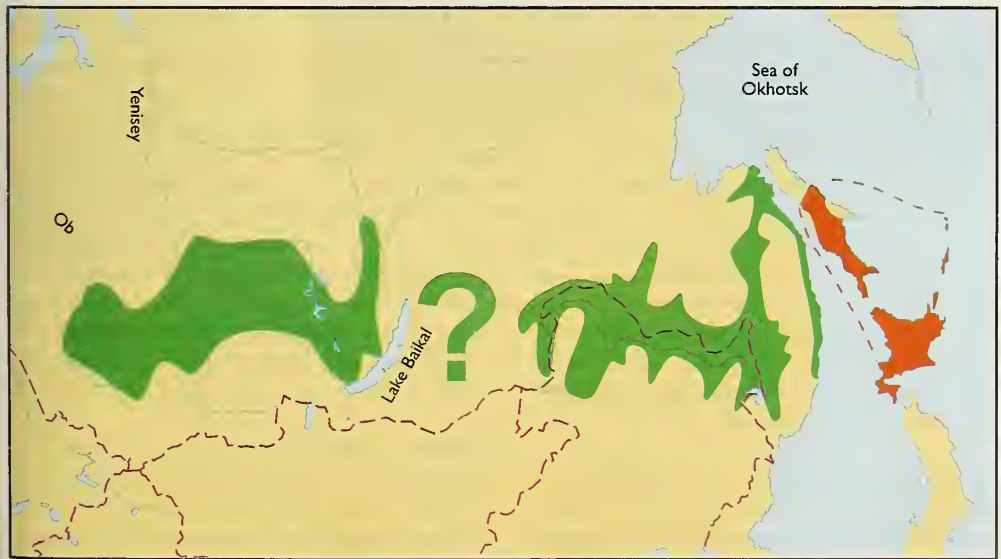


Fig. 1. Map showing the known breeding range of Gray's Grasshopper Warbler *Locustella fasciolata* based upon data in Neufeldt & Netschajew (1977). Note the restricted range of the insular form *L. f. amnicola* (shaded in red).



271. First-winter Gray's Grasshopper Warbler *Locustella fasciolata* of the nominate form, west of Angarsk, Irkutsk Oblast, Russia, late July 1998. The distinctive sulphur-yellow tones to the underparts and supercilium are clearly visible. Note also the bright ochre colour of the lower mandible and compare with that of *L. f. amnicola*. It is not known to what extent the colour of the lower mandible varies in the nominate form, or whether this is age-related.



272. First-winter Gray's Grasshopper Warbler *Locustella fasciolata* of the insular form *L. f. amnicola*, Otayanma Bird Banding Station, Fukui Prefecture, Japan, October 1982. Compared with the nominate form, *amnicola* lacks the sulphur-yellow wash to the supercilium, and the dull, cold pink tone to the lower mandible is particularly striking.

also continues the debate regarding racial identification. In order to establish whether the Meinertzhagen specimen could really have originated from Île d'Ouessant, the identification, ageing and moult strategy of Gray's Grasshopper Warbler must be examined.

Identification of Gray's Grasshopper Warbler

Gray's Grasshopper Warbler is the largest of the *Locustella* warblers, being slightly larger than River Warbler but smaller than Great Reed Warbler. Although its identification is fairly

straightforward and has been discussed on several occasions (e.g. Rozendaal 1990, Alström *et al.* 1991), it is relevant to review the criteria again here, in order that differences between the nominate form and *L. f. amnicola* can be appreciated fully. Gray's Grasshopper Warbler most closely resembles River Warbler; the two species share unmarked, warm brown upperparts, but while the former has a fairly narrow and distinct supercilium that extends to the rear of the ear-coverts, the latter has an indistinct and poorly defined supercilium. The underparts of adult Gray's Grasshopper Warbler are washed with grey, except for the flanks and ventral region, which are warm fulvous-brown, while the undertail-coverts vary between warm peachy-buff and cinnamon-buff. The latter are usually unmarked but occasionally show indistinct paler tips, although never as contrasting and conspicuous as those of River Warbler. Unlike first-winter River Warbler, which lacks the yellow wash to the underparts and shows diagnostic dark brown striations that form a gorget across the breast, first-winter Gray's

Grasshopper Warbler has a distinct sulphur-yellow wash to the entire underparts, and any markings are restricted to narrow, dark tips to the throat and upper breast feathering, producing a series of fine crescents.

Timing of moult

Adult Gray's Grasshopper Warblers undergo a partial post-breeding moult in July and August, prior to migration. This involves the replacement of the head and body feathering and, occasionally, some or all of the rectrices. At this

time, some birds also replace up to four outer primaries (Cramp 1992), a strategy employed by several *Locustella* species, although many individuals do not do so (PRK pers. obs.).

The pre-breeding moult of both adult and first-winter birds of the nominate form is a complete moult, which commences between mid January and late February. This takes approximately 60 days to complete, so that by late April all birds are in fresh plumage prior to spring migration (Cramp 1992). Young birds retain first-winter plumage until this pre-breeding moult; once this moult is complete, adults and first-winters are no longer separable. The pre-breeding moult strategy of *amnicola* remains unknown but, since adults in spring are fresh, it is assumed that all age-groups undertake a complete pre-breeding moult, as nominate *fasciolata*.

After fledging, juvenile *fasciolata* has a partial post-juvenile moult in August, in which only the body feathering is replaced. Similarly, juvenile *amnicola* also replaces the body feathering at this time, with juvenile remiges and rectrices retained (T. Matsuo *in litt.*). Consequently, the remiges and rectrices of first-winter birds of both races would be expected to show less wear than that found on adults in September.

Identification of *L. f. amnicola* and separation from nominate *fasciolata*

Adult

Separating adult Gray's Grasshopper Warbler of the nominate race *fasciolata* from *amnicola* is fairly straightforward. Although there is indi-



Kiyooki Ozaki

273. First-winter Gray's Grasshopper Warbler *Locustella fasciolata* of the insular form *L. f. amnicola*, Otayanma Bird Banding Station, Fukui Prefecture, Japan, October 1982. First-winter *amnicola* lacks the sulphur-yellow wash to the underparts of the nominate form, making separation of first-winter birds straightforward. The separation of adults is potentially problematic, although adult *fasciolata* would show an extensive greyish wash across the breast and flanks, while the whitish belly would appear less extensive than on this individual.



Kiyooki Ozaki

274. First-winter Gray's Grasshopper Warbler *Locustella fasciolata* of the insular form *L. f. amnicola*, Otayanma Bird Banding Station, Fukui Prefecture, Japan, October 1982. The fresh, unworn tips to the primaries and rectrices establish this as a bird which fledged a few months earlier. Adults moult these feathers on the wintering areas prior to spring migration and appear worn in autumn.

vidual variation, *amnicola* shows slightly darker brown upperparts, and invariably lacks the conspicuous grey wash to the underparts that characterises *fasciolata*. Instead, the underparts of *amnicola* are washed dull brown and although there is often a slight greyish tinge, this is frequently difficult to distinguish, so the underparts always appear browner and slightly warmer than those of *fasciolata*. Typically,



275. First-winter Gray's Grasshopper Warbler *Locustella fasciolata*, of the insular form *L. f. amnicola*, Hokkaido, Japan, September 2003. The underparts of first-winter *L. f. fasciolata* are strongly washed sulphur-yellow and the sides of the throat and upper breast usually show narrow, dark crescentic fringes; in contrast, those of *L. f. amnicola* are paler, with the lower throat, breast and belly appearing pale creamy-buff in most birds, and lacking the darker feather fringes. On some individuals, however, the breast is buffish-brown (although it never approaches the mid-grey tones typical of most adult *fasciolata*) and the belly white.

amnicola also has a less conspicuous supercilium than *fasciolata*, and although this still extends to the rear of the ear-coverts, it is dull greyish-brown, narrow and less contrasting. The ear-coverts of *amnicola* are also slightly warmer and browner, with whitish shaft-streaking restricted to the lower edge, where they merge with the malar region and the sides of the throat. The chin and throat are white or pale buffy-white, with the lower throat and sides usually showing indistinct warm brown feather tips that create a faint barring effect, and merge across the malar region with the streaked lower ear-coverts.

Caution is needed with some birds breeding in northeast China, towards the eastern limit of the range of *fasciolata* within continental Asia. In this region, a small percentage of adults can display plumage characters that have been proposed as being unique to *amnicola*, including warmer and browner tones to the breast (Neufeldt & Netschajew 1977). Consequently, establishing the identity of a putative adult *amnicola* away from the breeding grounds requires great care.

First-winter

In first-winter plumage, the upperparts of *amnicola*, including the fringes to the closed wing, are, on average, slightly warmer and browner

than on *fasciolata*, but there is overlap. Differences in underpart coloration provide a more reliable means of separation. Unlike *fasciolata*, in which the supercilium and underparts are washed strong sulphur-yellow, often with narrow dark brown tips to the lower throat and sides of the breast, first-winter *amnicola* shows a pale creamy-buff wash to the supercilium and ear-coverts. Furthermore, the underparts, including the lower throat, breast and belly, are pale creamy-buff in most birds; they can occasionally be buffish-brown with a white belly (T. Matsuo *in litt.*, plate 275), but never grey, and do not resemble the underparts of

adult *fasciolata*. Consequently, separation of most first-winter *amnicola* from adult *fasciolata* is straightforward, using a combination of plumage characters and the fresher, less worn plumage of the former. During the winter months, however, the underpart feathering of first-winter birds of both forms fades and wears, and it may then be impossible to assign some individuals to either form until the pre-breeding moult is completed.

Measurements

Stepanyan (1973) and Neufeldt & Netschajew (1977) (table 1) showed that differences between nominate *fasciolata* and *amnicola* are only slight, with *amnicola* averaging slightly smaller. Although there is considerable overlap between larger *amnicola* and smaller *fasciolata*, those birds outside the overlap range are separable.

Wing structure

Minor differences in wing structure cited by Stepanyan (1973) as being diagnostic of *amnicola* were found to be inconsistent and unreliable in a larger sample measured by Neufeldt & Netschajew (1977). In both taxa, P3 (primaries numbered ascendantly) is always emarginated and forms the wing point. Stepanyan considered *amnicola* to have a slightly shorter and

Table 1. Wing length, tail length, tarsus length, bill length (measured to distal edge of nostril) and tail rounded (difference between shortest and longest tail-feathers) of Gray's Grasshopper Warbler *Locustella fasciolata*. All measurements in mm, taken from adults within the breeding ranges of nominate *fasciolata* and *L. f. amnicola*. Figures in parentheses refer to mean value and sample size respectively. Source: Neufeldt & Netschajew (1977).

	<i>L. f. fasciolata</i>		<i>L. f. amnicola</i>	
	Males	Females	Males	Females
Wing	77–85 (80.6; 46)	72–79 (76.2; 7)	72–80 (77.2; 15)	75, 76
Tail	66–79 (70.8; 46)	66–70 (68.4; 7)	61–71 (68.3; 15)	69, 69
Tarsus	26–29 (27.4; 46)	25–27.5 (26.3; 7)	25–27.5 (26.3; 15)	25, 25.4
Bill	10.2–12.1 (11.4; 46)	10.5–12.0 (11.35; 7)	10.3–12.0 (11.4; 15)	11.0, 11.4
Tail rounded	17–27 (22.7; 46)	21–25 (22.7; 7)	19–23 (20.9; 15)	20, 21

more rounded wing, with the length of P2 equalling or falling below P4, but never exceeding P4. Using a larger sample size, Neufeldt & Netschajew found extensive overlap in primary positions between *amnicola* and *fasciolata*, and it is clear that wing structure is not a valid criterion for separating these taxa. Examination of specimens has shown that the position of P2 in *amnicola* is quite variable, sometimes falling below P5 while on other birds it can exceed P4 in length.

Reappraisal of the Meinertzhagen specimen Age and plumage

Establishing the correct age of the Meinertzhagen specimen is fundamental for both its identification and its authenticity. Completely fresh, unworn plumage is acquired only after the complete moult in late winter, so it is most unlikely that an adult in September could show this. Furthermore, the grey wash to the underparts of the Meinertzhagen specimen closely matches that of adult *fasciolata* collected in May and June in China and held in the NHM. The combination of plumage features and lack of feather wear suggests strongly that this specimen represents a bird collected shortly after finishing the complete moult in spring.

Measurements

Measurements taken from the three European specimens of Gray's Grasshopper Warbler are presented in table 2.

Although extensive overlap exists in measurements between nominate *fasciolata* and *amnicola* (Stepanyan 1973; Neufeldt & Netschajew 1977), it is clear that *fasciolata* averages slightly larger in all major measurements. At 84 mm (table 2), the wing length of the Meinertzhagen specimen falls well above the range given for *amnicola*, being 4 mm longer than that of the largest bird measured by Neufeldt & Netschajew (table 1). Furthermore, it also lies close to the upper limit of the adult-male sample of nominate *fasciolata* measured by Neufeldt & Netschajew (table 1). All other measurements fall within the overlap range and are thus inconclusive. Consequently, the identification of the Meinertzhagen specimen as *amnicola* cannot be supported using measurements; instead, wing length excludes *amnicola* and strongly supports identification as nominate *fasciolata*.

Evidence of fraud

In order to assess whether the Meinertzhagen specimen was likely to be fraudulent, the approach outlined by Rasmussen & Collar

Table 2. Wing length, tail length, tarsus length, bill length (measured to distal edge of nostril) and tail rounded (difference between shortest and longest tail-feathers) of the three specimens of Gray's Grasshopper Warbler *Locustella fasciolata* recorded in Europe. All measurements in mm; all taken by PRK.

Location	Île d'Ouessant, France	Île d'Ouessant, France	Lodbjerg, Denmark
Date	26th September 1913	17th September 1933	25th September 1955
Age	first-winter	adult	first-winter
Wing	79	84	77
Tail	64	70	64
Tarsus	27.3	26.7	27.1
Bill	13.4	13.2	13.0
Tail rounded	18	22	18

(1999) and Rasmussen & Prŷs-Jones (2003) was adopted. Detailed external study was made of its preparation style and the material used in its make-up, and the specimen was X-rayed so that a similar internal study could be made. The registers of the NHM bird collection were closely checked against the specimens of Gray's Grasshopper Warbler currently present in order to pinpoint series with missing specimens. The external and internal preparation style of other members of such series were analysed in the same manner as for the Meinertzhagen specimen, to determine the degree of similarity in their make-up. This comparative analysis was complicated by the fact that it was immediately apparent that the Meinertzhagen specimen had been extensively remade at some point after its initial preparation, making its resemblances to other series of specimens more difficult to assess. Extensive remaking is unusual among Meinertzhagen specimens, though not unprecedented, as documented in detail for his Forest Owlet *Heteroglaux blewitti* specimen (Rasmussen & Collar 1999). Furthermore, extensive remaking by a collector of a particularly rare specimen originally prepared by himself would not be expected and must be regarded as suspicious in itself (Rasmussen & Collar 1999).

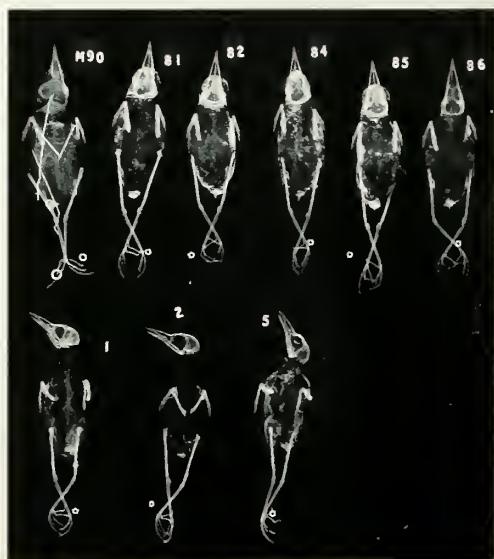
Of the series of Gray's Grasshopper Warbler specimens present in the NHM, two contain unexplained gaps. Two specimens (reg. Nos. 1914.6.12.3 and 1914.6.12.5, female and

unsexed respectively) are missing from a series of five collected by P. Bergen in June 1898 in Shandong (Shantung) Province, northeast China, and received by the NHM as part of the Styan collection. A further, male specimen (1909.11.20.283) is missing from a series of six birds collected by A. Owston in June 1908 at Kingam Mountain, north Manchuria, and received as part of a collection from C. Ingram. The plumage condition of the Meinertzhagen specimen closely resembles that of birds from both these series, and the complete ossification of its skull revealed by X-ray further confirms that it is an adult.

Allowing for features clearly associated with its remaking, the Meinertzhagen specimen shows a close resemblance to the Owston series from Manchuria, but less similarity with the Bergen/Shantung specimens (plates 276 & 277). Considering external features first, the Meinertzhagen specimen has a pinhole through the nostrils, as do the Owston specimens, each of which still retains a thread through them tying the mandibles together; this is not found on any of Bergen's specimens. The broad neck, sunken chin and puffed-out throat of the Meinertzhagen specimen all resemble Owston's, as does the clean, white cotton in the wide-open eye sockets; in all these respects Bergen's specimens differ, their cotton having a yellowish tinge. The original belly incision was short (vent to lower breast) on the Meinertzhagen and



276. Ventral view of nine Gray's Grasshopper Warblers *Locustella fasciolata* from the NHM, Tring, bird collection. Top row, from left to right: Meinertzhagen specimen 1965.M.13490 and Owston specimens 1909.11.20.281-282 and 284-286. Bottom row, from left to right: Bergen specimens 1914.6.12.1, 2 and 4.



277. Ventral X-rays of the nine Gray's Grasshopper Warblers *Locustella fasciolata* shown in plate 276, arranged in the same order.

Owston specimens, but long (vent to upper breast) on the Bergen specimens, although it has been extended by a straight-edged, obviously secondary, incision through dried skin on the Meinertzhagen specimen during remaking. The wing position of the Meinertzhagen and Owston specimens is similar, being well back and high, with the wing-tips on either side of the tail, whereas the Bergen birds have the wings lower and more to the sides. The Bergen specimens also had the tail bases pushed in higher, so their claws are closer to their tail tips than is the case for the Owston and Meinertzhagen specimens. Internally, the Meinertzhagen specimen's wing bones retain the radius, resembling the Owston but not the Bergen specimens, and the ulna and carpometacarpus in the Meinertzhagen and Owston specimens are positioned at more acute angles to each other than in the Bergen specimens.

At some point, probably during remaking, the head of the Meinertzhagen specimen has been removed, repositioned and then glued and wired back into place. External and internal examination show that during this process the neck was shortened by a few millimetres owing to skin being overlapped, which has had the effect of bringing the neck forward. As a result, unlike the case with the Owston specimens, the Meinertzhagen specimen's head does not rest on the surface when the bird is laid on its back. The rear of the skull of the Meinertzhagen specimen was trimmed during remaking and its centre back cracked; the skull then re-dried around its new stuffing in an unnaturally spread position. A support stick, wire and pins were also inserted during remaking, and the belly was less overstuffed than is typical of the Owston specimens. Finally, the legs of the Meinertzhagen specimen were rotated around so that they could be sewn together and around the support stick, resulting in a large tear in the dried skin at the top of the right tibiotarsus.

Conclusions

After reviewing all specimens of Gray's Grasshopper Warbler held in the NHM and comparing the Meinertzhagen specimen with others held in this collection, it is clear that Williamson (1968) was correct: this individual is an adult bird in fresh plumage. Furthermore, the wing-length measurement places it firmly within the range of nominate *fasciolata* and outside that of *amnicola*. In addition, its

appearance and the fresh, unworn plumage make it, to all intents and purposes, identical to several adults of nominate *fasciolata* held in the NHM collection that were collected in eastern China in late May and June. An adult in September would be expected to be moderately worn, as its remiges and rectrices would be approximately six months old, considerably older than the corresponding feathers of first-winter birds. The remiges and rectrices of the Meinertzhagen specimen are fresh and unworn, and certainly in better condition than those of first-winters, including the two collected in Europe in late September.

Without doubt, the Meinertzhagen specimen from Île d'Ouessant refers to an adult Gray's Grasshopper Warbler of the nominate form and, with a wing length of 84 mm, it is almost certainly a male. Measurements and plumage characters firmly establish that it is not referable to the insular form *amnicola*. It is considered that this specimen could not have been collected on 17th September as stated on the specimen label and by Meinertzhagen (1948). Instead, it is highly probable that it is the re-labelled male Owston specimen 1909.11.20.283, in reality taken in June in northern Manchuria; as such, it would represent much the longest-distance Meinertzhagen fraud yet documented. Having established beyond reasonable doubt that this specimen is erroneously labelled, it should no longer be accepted as having occurred in a naturally wild condition in France.

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Siberian Blue Robin at Minsmere:

new to Britain

Kieran Foster

ABSTRACT A first-winter or female Siberian Blue Robin *Luscinia cyane* at Minsmere, Suffolk, on 23rd October 2000 became the first record of this species in Britain, and only the third in the Western Palearctic (following individuals on Sark, Channel Islands, in October 1975, and in Spain in October 2000). A subsequent bird on North Ronaldsay, Orkney, in October 2001 remains the only other Western Palearctic record.

On 23rd October 2000, I decided to visit my sister in Leeds, but to do so via a roundabout route that would take in the Sociable Lapwing *Vanellus gregarius* and Pallas's Leaf Warbler *Phylloscopus proregulus* that had appeared at Minsmere, Suffolk, during the preceding few days. Owing to the combination of a late start and heavy traffic, I did not arrive at Minsmere until late afternoon and I hurried towards the sluice bushes and adjacent levels hoping to find both birds before the daylight faded. On reaching the sluice bushes at approximately 16.50 hrs, I flushed a small brown passerine that showed a broad tail, creating the impression of a *Locustella* warbler. The bird dropped into the Marram *Ammophila arenaria* a short distance away, and I quickly relocated it, this time on the ground, and noticed that it was unstreaked and had strikingly pale pink legs. Clearly this was not a *Locustella* warbler but a bird that I was unfamiliar with. It then flew again and I was unable to relocate it.

Since there were several observers nearby, watching the Sociable Lapwing, I asked another birder to help me to relocate the unidentified passerine. We returned to the area where I had last seen it but again failed to find it. Becoming increasingly frustrated, I returned to the sluice bushes, where several birders were looking for the elusive Pallas's Leaf Warbler. Most seemed uninterested in my mystery bird, but after several minutes Mark Cornish and Mark Nesbitt agreed to help as

they were returning to their cars at Sizewell.

Almost immediately, Mark Cornish flushed a bird that he felt was a Dunnock *Prunella modularis* from the edge of the dunes, but I was fairly certain that this must be the bird. Shortly afterwards it flew again, and this time we saw it land. Luckily it remained in view, skulking at the base of a clump of Marram, and this time it gave better, more prolonged views. I was now able to note a pale buff eye-ring, stout bill, warm honey or creamy colour to the throat and breast, and smudged brown crescents on the breast. Faced with a bird that the four of us were still unable to identify, I ran to the edge of the dunes and whistled to attract the attention of the few remaining birders, including Paul Varney, who were still searching for the Pallas's Leaf Warbler. Just as they arrived, the bird flew off, across the beach and out to sea. Thankfully, it returned quickly and dropped onto the shingle beach. One of those present then shouted 'Swainson's Thrush!' [*Catharus ustulatus*], but although the colouring on the breast and the conspicuous eye-ring did give this initial impression, the bird was clearly too small to be a Swainson's or any other *Catharus* thrush.

The bird remained in view on the beach, apparently exhausted, for about 15 minutes, during which time it sat motionless, its head 'hunched in' and bill pointing skywards. Throughout, the sun was behind us, and the visibility and light were excellent. Even with these prolonged views, the observers remained

perplexed and were unable to put a name to this bird, or even sensibly suggest which family it belonged to. I made a telephone call to Chris Batty and Andrew Raine at Rare Bird Alert, seeking their advice, while Paul Varney telephoned Richard Millington for his opinion. During these discussions, it was tentatively suggested that the bird may be a Siberian Blue Robin *Luscinia cyane*, and I was asked if the bird had a blue tail. Owing to the angle of the bird and the obviously short tail, I simply couldn't be sure, so I moved along the dune to change my viewing angle. As I did so, the bird turned towards me, and it was at this point that it was seen to quiver its tail, and one observer thought that he saw a blue tinge to the tail.

After approximately 15 minutes, the bird again flew towards the dunes and landed in a patch of Marram. It was subsequently seen again on three or four occasions, but only in flight, the final time being at about 17.50 hrs, when it flew over the dunes and was lost to view. In the failing light, it was decided that we should not disturb it again. We had seen it well on the beach and further flight views in poor light seemed unlikely to add substantially to our description. By this time, and following the telephone discussions, we became convinced that we could only have been watching a female or first-winter Siberian Blue Robin. News of the bird was released via the pager services and Birdline. Not surprisingly, the following morning saw a huge gathering of would-be observers, numbering in excess of 800 people, but despite extensive searching throughout the day, the bird was not seen again.

Description

During the period that the bird was in view, the following description was taken.

Size, structure and behaviour

In flight, it was clearly a small passerine, similar in overall size to Dunnock. During the initial views, it flew fast and low, and gave only fleeting glimpses, during which the tail appeared distinctly broad, creating the impression of a *Locustella* warbler. This impression was further reinforced by the distinctly two-toned appearance, the bird being dark above and pale below.

Later, when it was watched at rest on the beach, where it gave prolonged and unrestricted views, the impression it gave was reminiscent of a small Swainson's Thrush. This was, in part,

due to the combination of the coloration of the throat and upper breast, along with a conspicuous pale eye-ring. The bird was, however, distinctly smaller than Swainson's Thrush, with a robust structure and short, broad tail that was seen to quiver. Throughout, the bird appeared exhausted, and sat motionless with its head hunched into the shoulders, and the bill pointing skywards, at about 45° to the horizontal. Later examination of video footage from China established that this behaviour is characteristic of Siberian Blue Robin.

Plumage

Upperparts dark brown. One observer thought he noticed a blue tinge to the tail. Throat and upper breast warm honey- or yellow-brown in colour, and 'necklace' of smudged brown, downward-facing crescents on the breast. There was quite obvious demarcation between the warm-toned upper breast and the white lower breast and belly.

Bare parts

Legs strikingly pale, 'bubble-gum' pink. Bill was large, strong-looking and dark, but with a pale grey base to the lower mandible. Eye large and dark, with warm buff eye-ring.

Associated species and weather conditions

In September 2000, a high-pressure anomaly lay over Scandinavia, producing frequent southeasterly winds between Britain and the Baltic. During October, this anomaly intensified and extended eastwards. At the same time, the southeasterlies withdrew eastwards and became much more frequent than normal over the whole of Scandinavia, the Baltic and western Russia, while southern Britain was then dominated by winds from the southwest.

As Siberian Blue Robin departs from its southern Siberian breeding grounds in September to winter in Southeast Asia, the track of the Minsmere bird prior to arrival on 23rd October is subject to considerable conjecture. The location and meteorological circumstances of its arrival seem to exclude the higher-latitude track more usually associated with vagrants from southern Siberia. This leads to the tentative conclusion that a leisurely westwards passage in fine weather through a ridge of high pressure over central Europe and Russia was the likely scenario. However, to survive such a leisurely passage, it would necessarily have had

to remain within a suitable forested habitat zone. The distribution of this habitat type would suggest that its route in Asia was mainly north of latitude 55°N.

If the bird was indeed newly arrived in Suffolk on 23rd October, it is possible that continued stimulation by fine warm conditions over Europe provoked a northwestward movement into Britain. A ridge of high pressure then extended from Ukraine to southern France, south to southeasterly winds extending over the whole of central Europe from 20th October. The warmest weather in The Netherlands and eastern France occurred on 22nd and 23rd, under clear skies. Further west, the south-east of Britain was subject to southwesterly winds from 17th to 19th, backing light south-southeasterly from 20th. A weak, slow-moving front present early on 23rd gave light surface winds, broken cloud, mist patches and a little rain, perhaps contributing to the bird's landfall. Winds subsequently veered southwest and strengthened as a more active cold front crossed the region later that morning. If the bird had arrived prior to 23rd, then it could have made landfall on or before 20th. Another Siberian Blue Robin was found at the Ebro River Delta, northeast Spain, on 18th October. While the route taken by that bird is equally uncertain, it seems more than a coincidence that two individuals were found in western Europe within five days. The comments above concerning the Minsmere bird could apply equally to the Spanish individual, apart from the final stages of its passage.

During the first few days of October, exceptional numbers of Radde's Warblers *Ph. schwarzi* appeared in eastern England, along with a sprinkling of the commoner Asian species we have come to expect at this time of year, including Dusky *Ph. fuscatus* and Yellow-browed Warblers *Ph. inornatus*. This fall succeeded periods of southeasterly winds in late September. Most of October was, however, much less favourable to arrivals from the east, despite the continued southeasterly situation over Scandinavia. Westerlies predominated from 23rd October to the end of the month, and just a handful of Pallas's Leaf Warblers appeared in Britain during the last ten days of October, including one at Minsmere. To the north, a Brown Shrike *Lanius cristatus* made it to Fair Isle, Shetland, on 21st October.

Status and distribution

Siberian Blue Robin is a summer visitor to a vast region of central and eastern Siberia, extending from the Ob River basin and the Altai Mountains of eastern Kazakhstan, east to Amurland and the Sea of Okhotsk, and from northeast China south to Hebei province, Sakhalin and northern Japan. Autumn migration begins early, with birds departing from the breeding areas in August and passing through the coastal regions of northeastern China in early to mid September. This species can be abundant at well-monitored migration watch-points, including the coastal sites of Beidaihe and Happy Island, Hebei province, but to the south of the Yangtze River, it is uncommon throughout China's coastal provinces. Carey *et al.* (2001) described it as a scarce migrant through Hong Kong, with numbers peaking there in late September. It would seem that most migrants pass inland across central China to reach Thailand and the Indochinese countries where many winter, while others continue south, to wintering grounds in peninsular Malaysia, Singapore and Indonesia. At Fraser's Hill, Malaysia, where Siberian Blue Robin is a common autumn migrant, Medway & Wells (1976) noted the earliest occurrence on 16th September, with southbound passage continuing until 20th November. In Singapore, southbound passage into Sumatra peaks in the second half of October, with migrants recorded into early November, although many also remain here throughout the winter.

Other Western Palearctic records

Prior to this bird, there had been just two records of Siberian Blue Robin within the Western Palearctic. The first, a first-winter female, was trapped on Sark, Channel Islands, on 27th October 1975 (Rountree 1977). This was followed, 25 years later, by a first-winter male trapped at the Canal Vell lagoon in the Ebro Delta, northeast Spain, on 18th October 2000 (Bigas & Gutiérrez 2000), just five days prior to the discovery of the Minsmere bird. Subsequently, a first-winter male was found on North Ronaldsay, Orkney, on 2nd October 2001 (Brown 2001).

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EDITORIAL COMMENT Colin Bradshaw, Chairman of the British Birds Rarities Committee, said: 'Since the majority of records of new birds for Britain are now submitted with a portfolio of documentation that includes video footage, pin-sharp photographs and numerous descriptions, we were, initially, a little concerned by the accounts we received. In fact, of the last 20 species new to Britain, only this bird and the Anglesey Grey Catbird *Dumetella carolinensis* have not come with a wealth of supporting evidence. However, an analysis of the various descriptions received showed a pleasing degree of consistency in key features from a group of people with no obvious previous connections. The lack of immediate recognition comes as no surprise, and the need for assistance (by telephone) to identify this species, which is usually known from images of spring males, is to be expected when confronted with an autumn immature on a cold October day. Although not well known, the features of birds in immature or female plumage, though subtle, are quite distinctive. The bright pink legs, large eye, scaled underparts and relatively short tail are characteristic of Siberian Blue Robin, and only Veery *Catharus fuscescens* and Rufous-tailed Robin *Luscinia sibilans* share similar features. These other species show rusty tones on the upperparts, however, and so have an upperpart coloration which is quite different from the cold earth-brown shown by Siberian Blue Robin. In addition, the buffy eye-ring and throat, and gorget of crescents on the upper breast were spot on for Siberian Blue Robin as were the behaviour and posture. Like many skulking birds caught in the open, Siberian Blue Robin will often 'freeze' and show very well. The coincidence in timing with the individual in Spain and subsequent appearance of another the following year in Orkney added extra support to the record.'

Bob McGowan, Chairman of the British Ornithologists' Union Records Committee, commented: 'The Minsmere Siberian Blue Robin, seen by just a few lucky observers, was watched briefly on several occasions during a period of less than an hour towards dusk on 23rd October 2000. Unusually for contemporary claims for British firsts, it was not photographed. Owing to the small number of observers and the relatively brief views of the bird, this record struggled somewhat on BOURC circulation. Particular concerns were the lack of images, a significant identification hurdle for a potential first for Britain, and the number of Siberian Blue Robins in the bird trade.'

'Nonetheless, BOURC felt that the bird was sufficiently well described to confirm the identification as a first-year or adult female Siberian Blue Robin. Although this species is known to be kept in captivity relatively commonly, the circumstances of this record are indicative of the bird being a natural vagrant rather than an escape. The date and location were both consistent with natural occurrence, and coincided with the appearance of many other Siberian vagrants in Europe, including a remarkable 31 Radde's Warblers (which share a similar range to Siberian Blue Robin) in Britain that autumn, a Brown Shrike in Germany as well as the one on Fair Isle, and two Siberian Accentors *Prunella montanella* in Finland. One significant factor that reassured the Committee that probability of natural vagrancy outweighed likelihood of escape was the discovery of a first-winter female Siberian Blue Robin on North Ronaldsay just one year later, on 2nd October 2001. Not only are the Northern Isles an acknowledged hotspot for eastern vagrants, but they are a considerable distance from the likely sources of escaped birds.'

'The positive identification at Minsmere and recognition of potential vagrancy allowed the acceptance of Siberian Blue Robin onto Category A.'

Drinking and bathing by birds in a garden

Christopher F. Mason and Sheila M. Macdonald

ABSTRACT The use of two birdbaths, situated at different distances from cover, and a garden pond was recorded over a 12-month period. Thirty species used the birdbaths but only eleven used the pond, which received only 2% of the total visits recorded. There were seasonal differences in the number of species and number of visits to the birdbaths, and most species showed a marked preference for the birdbath closest to cover. There were significant differences among species in the use of birdbaths for drinking and for bathing, and this also varied seasonally for some species. Differences in use of birdbaths during the day were also observed. Group bathing and mixed bathing were often recorded, while dew-bathing was also observed during summer months. We recommend that a simple pedestal birdbath, situated close to cover, provides the best drinking and bathing environment for a variety of bird species.

There is currently considerable interest in gardens as habitats for birds and in the role of gardens in the conservation of some species, while an estimated £150–180 million is spent annually on attracting birds and feeding them in gardens (Cannon 1999, 2000; Mason 2000; Glue 2005). It is estimated that gardens cover some 500,000 ha of England and Wales, and sufficient data exist from surveys in gardens in the UK to construct seasonal and annual population trends (Cannon *et al.* 2005).

There are many books concerning wildlife gardening, the majority including substantial information on birds (e.g. Baines 1985, 2000, Gibbons & Gibbons 1988, Moss & Cottridge 1998, Burton 2005). The advice they provide on improving gardens for birds is largely anecdotal, there being little evidence that it is effective (Gaston *et al.* 2005). These books deal in detail with the provision of food but even here there have been surprisingly few systematic studies of the use of bird feeders and bird tables in the UK (e.g. Cowie & Hinsley 1988), considering the large annual expenditure on bird foods by the general public. Much less information exists on the provision of water, and the advice is generally that a pond will prove more attractive to a wider range of species than a birdbath (e.g. Moss & Cottridge 1998). One exception is Glue

(1982), who reported in some detail on a study into the drinking and bathing habits of garden birds by the Devon Bird Watching and Preservation Society (Coard 1976, 1979).

Birds need to drink when their food provides insufficient water to balance their bodily requirements, so that birds with dry diets, such as seeds, drink more than those taking more succulent foods, such as insects or fruit (Campbell & Lack 1985). Birds bathe in water to cleanse soiled plumage but especially to allow for efficient oiling or preening following wetting. Some groups (e.g. doves (Columbidae), sparrows (Passeridae) and wrens (Troglodytidae)) also dust-bathe, though dusting cannot serve exactly the same purpose as bathing in water and its functions are not entirely clear (Campbell & Lack 1985).

This paper reports on the use of two birdbaths and a small pond over a 12-month period in a garden. We examine the seasonal variations in drinking and bathing by bird species and compare the use of the two baths and a pond in relation to their distance from cover.

Study site and methods

The study site was the garden of our previous home, situated in the parish of Ramsey, in northeast Essex (TM 196312). It has arable land to the front and pasture to the rear, and a single

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278. Near and Far birdbaths, Essex, 2005.

row of houses and large gardens to both sides. Stour Wood, a bird reserve, is close by, within 125 m at its nearest point and linked to the garden from the west and north by continuous hedgerows. The garden plot is 118 m long and 22 m wide. It contains lawns, vegetable plots, flowerbeds, shrubberies (with many ornamental evergreens) and a number of mature trees, including Pedunculate Oak *Quercus robur*, Silver Birch *Betula pendula*, Alder *Alnus glutinosa*, willows *Salix* and conifers. A continuous Blackthorn *Prunus spinosa* hedge on the eastern boundary also contains much Bramble *Rubus fruticosus* agg. and Common Ivy *Hedera helix*.

a vegetable plot, with dense conifer cover 3.4 m to the south and 5.7 m to the west (plate 278). Both baths were filled with clean water daily, more often in hot weather, and the bowls were scrubbed regularly to prevent the build-up of a slippery biofilm.

A small pond (dimensions 1.1 m x 0.6 m, maximum depth 0.35 m) was situated on the edge of the lawn, immediately adjacent to conifer cover (plate 279). It contained oxygenating plants and some emergents (Lesser Water-parsnip *Berula erecta*, Yellow Iris *Iris pseudacorus*) and was provided with a large, flat stone in shallow water to allow access to birds

for bathing. The water level was kept topped up. Two larger ponds elsewhere in the garden could not be seen from the observation point.

Observations were made mainly from the kitchen window, which was 16 m from the pond, 17 m and 22 m from the Near and Far birdbaths respectively, but also sometimes from a seat in front of the kitchen window. Observations were made opportunistically rather than at set periods of the day, but

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279. Pond and Near birdbath, Essex, 2005.

Table 1. The number of visits (total 6,309) to two garden birdbaths in northeast Essex over a 12-month period, 2004/05.

Species	No. visits	%
Blackbird <i>Turdus merula</i>	1,471	23.32
Blue Tit <i>Cyanistes caeruleus</i>	1,405	22.27
Greenfinch <i>Carduelis chloris</i>	1,010	16.01
Common Chaffinch <i>Fringilla coelebs</i>	455	7.21
House Sparrow <i>Passer domesticus</i>	341	5.40
Robin <i>Erithacus rubecula</i>	301	4.77
Great Tit <i>Parus major</i>	287	4.55
Collared Dove <i>Streptopelia decaocto</i>	235	3.72
Long-tailed Tit <i>Aegithalus caudatus</i>	189	3.00
Dunnock <i>Prunella modularis</i>	117	1.85
Blackcap <i>Sylvia atricapilla</i>	74	1.17
Wood Pigeon <i>Columba palumbus</i>	68	1.08
Coal Tit <i>Periparus ater</i>	57	0.90
Common Chiffchaff <i>Phylloscopus collybita</i>	49	0.78
Common Starling <i>Sturnus vulgaris</i>	47	0.74
Goldcrest <i>Regulus regulus</i>	45	0.71
Great Spotted Woodpecker <i>Dendrocopos major</i>	27	0.43
Wren <i>Troglodytes troglodytes</i>	26	0.41
Willow Warbler <i>Phylloscopus trochilus</i>	24	0.38
Bullfinch <i>Pyrrhula pyrrhula</i>	19	0.30
Eurasian Jay <i>Garrulus glandarius</i>	15	0.24
Magpie <i>Pica pica</i>	15	0.24
Song Thrush <i>Turdus philomelos</i>	11	0.17
Goldfinch <i>Carduelis carduelis</i>	9	0.14
Garden Warbler <i>Sylvia borin</i>	5	0.08
Green Woodpecker <i>Picus viridis</i>	2	0.03
Spotted Flycatcher <i>Muscicapa striata</i>	2	0.03
Brambling <i>Fringilla montifringilla</i>	1	0.02
Mistle Thrush <i>Turdus viscivorus</i>	1	0.02
Common Whitethroat <i>Sylvia communis</i>	1	0.02

the kitchen was the main focus of activity during daylight hours, from dawn until dusk, so large numbers of records were collected. In both April and July there were periods of eight days when no observations were made. Birds were recorded as 'drinking', 'bathing' or 'drinking and bathing'. Birds merely perching on the baths or at the edge of the pond were not recorded.

Results

Use of birdbaths for drinking and bathing

A total of 6,309 visits to the two birdbaths was recorded over the 12-month period, involving a total of 30 species (table 1). The most frequent visitors, accounting for more than 60% of the records, were Blackbird *Turdus merula*, Blue Tit *Cyanistes caeruleus* and Greenfinch *Carduelis chloris*. The seven species with a total of fewer than ten records will not be discussed further.

The monthly distribution of observations at the birdbaths is shown in fig. 1. The baths were used most in September, January, May and June, and least in July. The number of species using the baths was highest in August, September and June, generally decreasing through the autumn and winter to a low in February, and then gradually increasing again through the spring. Young Robins *Erithacus rubecula* and Blackbirds began using the baths in May, while on 31st May a family of Coal Tits *Periparus ater* was bathing shortly after fledging.

To determine whether species used the two birdbaths to different extents, χ^2 tests (or, for small samples, Fisher's Exact tests) were conducted and the results are summarised in table 2. The majority of species used the Near bath significantly more often than the Far bath, the only exception being Magpie *Pica pica*, while five species showed no preference. Goldcrests

Regulus regulus used the Near bath exclusively and four other species used it on more than 90% of occasions. There appeared to be a relationship between the proportion of visits to the Near bath and the size of the species. This was examined using the data of mean weight in Hickling (1983), the results being shown in fig. 2. There is a strong inverse relationship between weight and the percentage of visits to the Near bath.

Significant differences in the

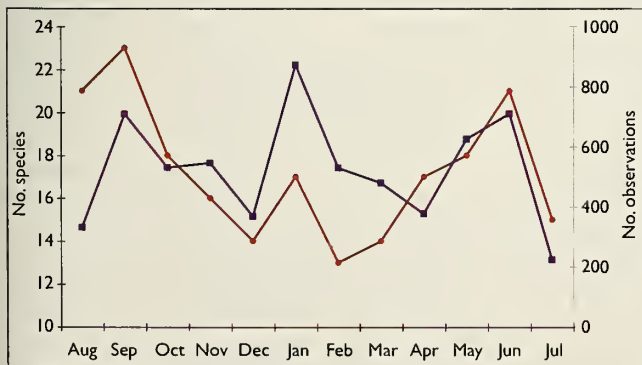


Fig. 1. The total number of observations (blue line) and number of species (red line) of birds using two garden birdbaths in northeast Essex over a 12-month period, 2004/05.

Table 2. The use of Near and Far birdbaths for drinking and bathing. Significance levels: * $P < 0.05$; ** $P < 0.01$; *** $P < 0.001$. Scientific names of species mentioned given in table 1.

Use of Near and Far birdbaths

Near birdbath used significantly more often (% Near in brackets):

Goldcrest (100); Wren (96.3***); Common Chiffchaff (93.2 ***); Long-tailed Tit (91.5***); Coal Tit (91.2***); Dunnock (87.2***); Blackcap (85.5***); Willow Warbler (84.0***); House Sparrow (81.8***); Blue Tit (81.4***); Bullfinch (78.9*); Great Tit (77.1***); Common Chaffinch (75.5***); Robin (72.4***); Greenfinch (66.4***); Blackbird (60.8***); Collared Dove (60.6**).

Far birdbath used significantly more often (% Far in brackets):

Magpie (86.7**).

No preference for either birdbath:

Great Spotted Woodpecker; Wood Pigeon; Song Thrush; Eurasian Jay; Common Starling.

Drinking and bathing

Visits were significantly more often for drinking than bathing (% drinking in brackets):

Collared Dove (98.7***); Great Spotted Woodpecker (96.3***); Eurasian Jay (93.3***); Wood Pigeon (87.1***); Magpie (86.7**); Greenfinch (83.2***); Common Chaffinch (79.0***); Blackbird (53.2*)

Visits were significantly more often for bathing than drinking (% bathing in brackets):

Long-tailed Tit (94.2***); Blackcap (89.2***); Goldcrest (86.7***); Common Chiffchaff (84.7***); Willow Warbler (84.0***); Song Thrush (83.3**); Robin (83.1***); Common Starling (80.9***); Wren (77.8**); Coal Tit (77.2***); Blue Tit (69.5***); Dunnock (68.4***); Great Tit (63.6***).

Visits for drinking and bathing not significantly different:

House Sparrow; Bullfinch.

overall use of birdbaths for drinking and bathing were also investigated using χ^2 (or Fisher's Exact test), the results being summarised in table 2. Eight species used the baths significantly more often for drinking, though only marginally so in the case of Blackbird. Collared Dove *Streptopelia decaocto*, Great Spotted Woodpecker *Dendrocopos major* and Eurasian Jay *Garrulus glandarius* were almost exclusively drinkers. Thirteen species used the baths significantly more often for bathing than drinking; in the case of Long-tailed Tit *Aegithalos caudatus* the baths were used almost exclusively for bathing, while House Sparrow *Passer domesticus* and Bullfinch *Pyrrhula pyrrhula* showed no

preference for either activity when using birdbaths.

Very few birds both drank and bathed on the same visit, this being recorded on only 2.5% of occasions. The only species deviating far from this average were Common Starling *Sturnus vulgaris* (6.4%), House Sparrow (4.4%), Goldcrest (4.4%), Dunnock *Prunella modularis* (4.3%) and Wood Pigeon *Columba palumbus* (4.3%).

Seasonal use of birdbaths

Seasonal use was investigated for the ten species with more than 100 observations. Of these, Blackbird, Blue Tit and Common Chaffinch

Fringilla coelebs showed significant changes in the proportion of birds bathing or drinking over the season ($\chi^2 = 77.1, 86.9, 25.5$ respectively; $df = 11, P < 0.001$). All three species drank more in the winter months and bathed more in summer (fig. 3). These species also showed seasonal differences in frequency of visits to the birdbaths (figs. 3–5), although all except House Sparrow were present every day in the garden. Blackbird and Chaffinch showed winter peaks, the latter especially

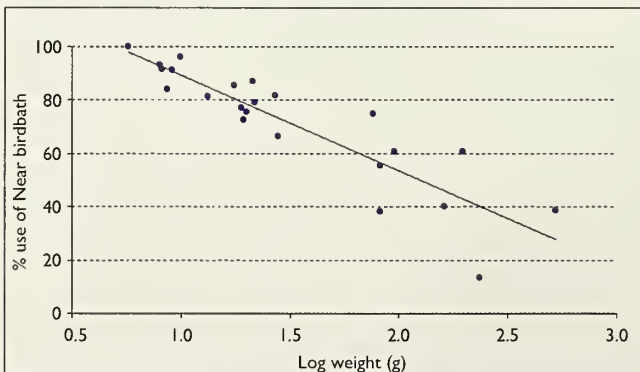


Fig. 2. The relationship between the mean weight of a species and the percentage use of the Near birdbath.

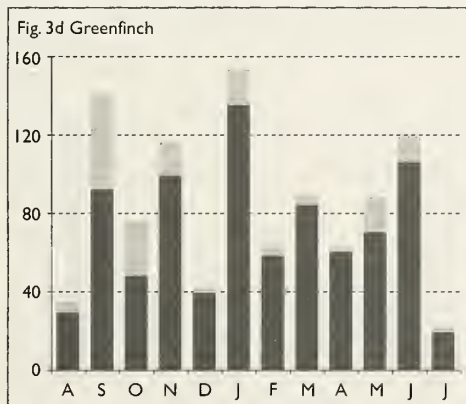
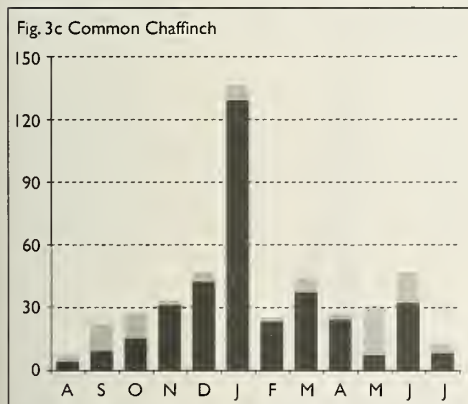
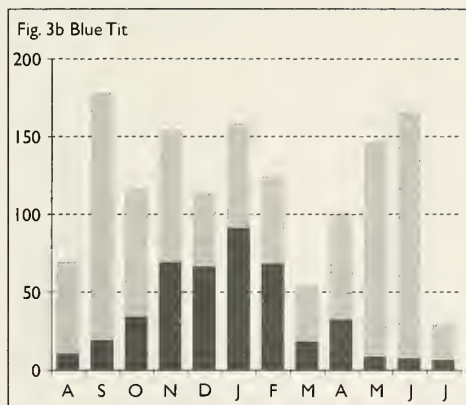
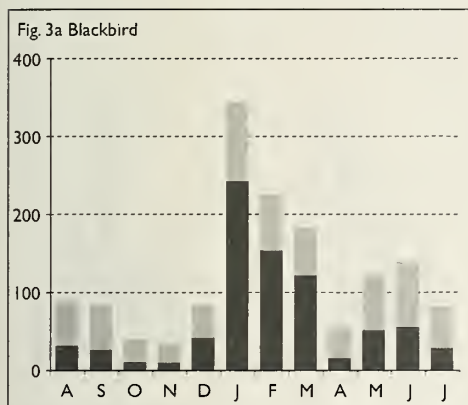


Fig. 3. Number of observations of drinking (black portion of bar) and bathing (grey) by Blackbird *Turdus merula* (3a), Blue Tit *Cyanistes caeruleus* (3b), Common Chaffinch *Fringilla coelebs* (3c) and Greenfinch *Carduelis chloris* (3d) over a 12-month period in a garden in northeast Essex, 2004/05.

so in January, while Dunnock, Robin and Great Tit *Parus major* were scarcer visitors in winter. Collared Dove showed a spring peak, at a time when Long-tailed Tits were scarce visitors. A sharp autumn peak of visits was apparent for House Sparrow. The visits of Blue Tit and Greenfinch fluctuated, with no obvious pattern.

Daily use of birdbaths

Since data were not collected systematically, it is not possible to describe the daily pattern of birdbath usage. However, as all species are equally likely to be seen, it is possible to compare patterns of usage among species. Fig. 6 (p. 528) shows the daily pattern of usage for the three most frequently recorded species for the months of February and June. All species make visits throughout the day. However, Blackbirds show a peak of early morning visits in both months, with a second peak in the middle of the day in June. Blue Tits made most visits between 12.00 and 15.00 hrs in February, with early morning and late afternoon peaks in June.

Greenfinches showed a large peak in visits at midday in February, and peaks in June in the early morning, midday and late afternoon.

Mixed bathing

The birdbaths were frequently very busy, especially with the arrival of tit flocks, and groups of up to 15 birds were observed bathing together in a single bath. Seventeen species were seen to share baths with other species. These included Great Spotted Woodpecker with Blue Tit; Robin with Blue Tit and Great Tit; and Willow Warbler *Phylloscopus trochilus* with Common Chiffchaff *Ph. collybita*, Blue Tit and Dunnock. The largest groups were 11 Blue Tits with four Long-tailed Tits; nine Blue Tits with one Great Tit and four Long-tailed Tits; and six Long-tailed Tits, three Blue Tits and a Goldfinch *Carduelis carduelis*. The birds appeared to stimulate one another to bathe.

Use of the pond

Only 131 visits were made to the pond,

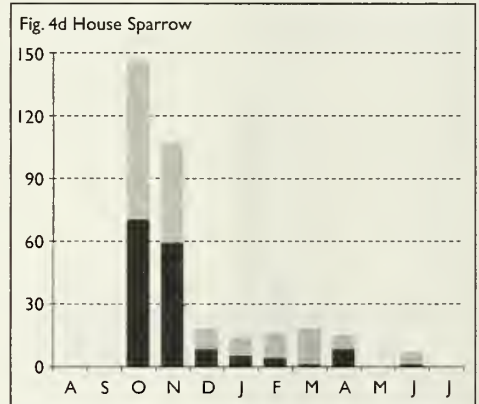
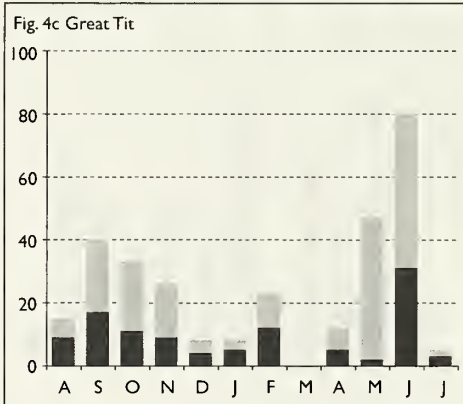
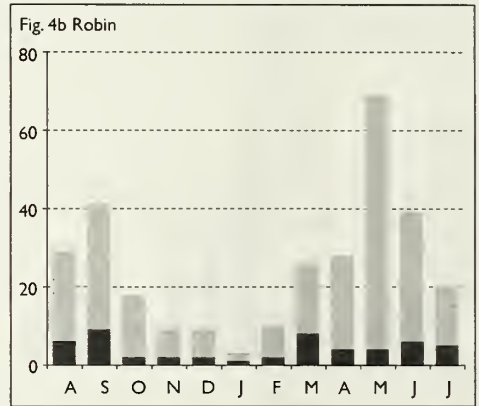
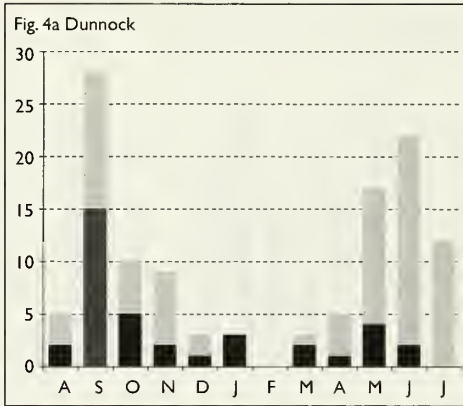


Fig. 4. Number of observations of drinking (black portion of bar) and bathing (grey) by Dunnock *Prunella modularis* (4a), Robin *Erithacus rubecula* (4b), Great Tit *Parus major* (4c) and House Sparrow *Passer domesticus* (4d) over a 12-month period in a garden in northeast Essex, 2004/05.



280. Blackbird *Turdus merula* at birdbath, Hampshire, April 2006.

Fig. 5a Collared Dove

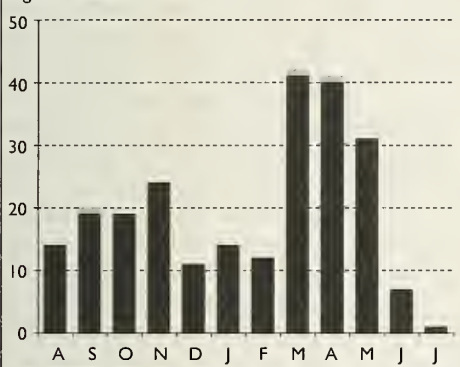


Fig. 5b Long-tailed Tit

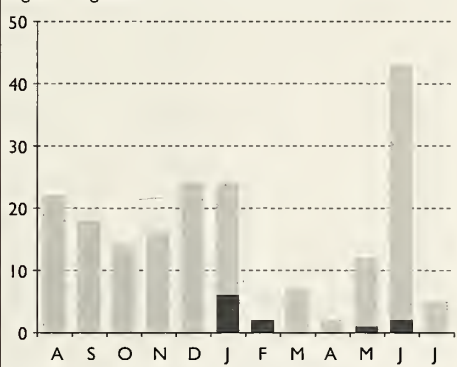


Fig. 5. Number of observations of drinking (black portion of bar) and bathing (grey) by Collared Dove *Streptopelia decaocto* (5a) and Long-tailed Tit *Aegithalos caudatus* (5b) over a 12-month period in a garden in northeast Essex, 2004/05.

involving just 11 species (table 3). Blackbird was the most frequent visitor and 87.5% of visits were to drink, compared with 53.2% at the birdbaths. The only other frequent visitor was Greenfinch, with 87% of visits for drinking, compared with 83% at the birdbaths.

Dew-bathing

Dew-bathing was seen only in July, August and September. It was observed on 18 occasions on the lawn, involving Greenfinch (5), Great Tit (4), Common Chiffchaff (4), Blackcap (2), Robin (1), Common Whitethroat *Sylvia communis* (1) and Chaffinch (1). Dew-bathing among leaves on trees was noted seven times, involving Blue Tit (4) and Common Chiffchaff, Willow Warbler and Dunnock on single occasions.

Discussion

There are some notable differences in frequency

of visits of species between our results and those recorded in Devon in the 1970s (Coard 1976, 1979, summarised in Glue 1982), which are probably more related to gross changes in population size between the two studies rather than geography. House Sparrow and Starling were by far the most numerous visitors to water in Devon, comprising 61% of all observations, whereas House Sparrow was the 5th most-frequent visitor and Starling was ranked only 15th in our study, making up just 6.1% of observations between them and clearly illustrating the decline in fortunes of these two species (Cannon *et al.* 2005). Similarly, the Song Thrush *Turdus philomelos* was ranked 9th overall in Devon but 23rd in Essex. Pied Wagtail *Motacilla alba* was recorded frequently as a bather in rural Devon gardens but never observed at our water, though birds overflow the garden regularly. Long-tailed Tits did not visit gardens in summer in Devon, though they did so often with us.

Redwings *Turdus iliacus* and Fieldfares *T. pilaris* were regular visitors to the garden in winter, the latter species occurring in a flock of up to 60 feeding on Crab Apples *Malus sylvestris* during a cold snap in February and March. Neither species used water, though we have subsequently observed a Fieldfare drinking at the Near bath, in January 2006.

The number of species using the birdbaths was highest in August and September, reflecting the movement of migrant species through the garden. A second peak in May and June may have represented the dispersal of birds from neighbouring habitats. The number of species using the baths was lowest in February and

Table 3. The number of visits (total 131) to a garden pond in northeast Essex over a 12-month period 2004/05. Scientific names of species mentioned given in table 1.

Species	No. visits	%
Blackbird	80	61.1
Greenfinch	23	17.6
Common Chiffchaff	9	6.9
Collared Dove	5	3.8
Blue Tit	5	3.8
Great Tit	2	1.5
Robin	2	1.5
Magpie	2	1.5
Eurasian Jay	1	0.8
Wood Pigeon	1	0.8
Wren	1	0.8

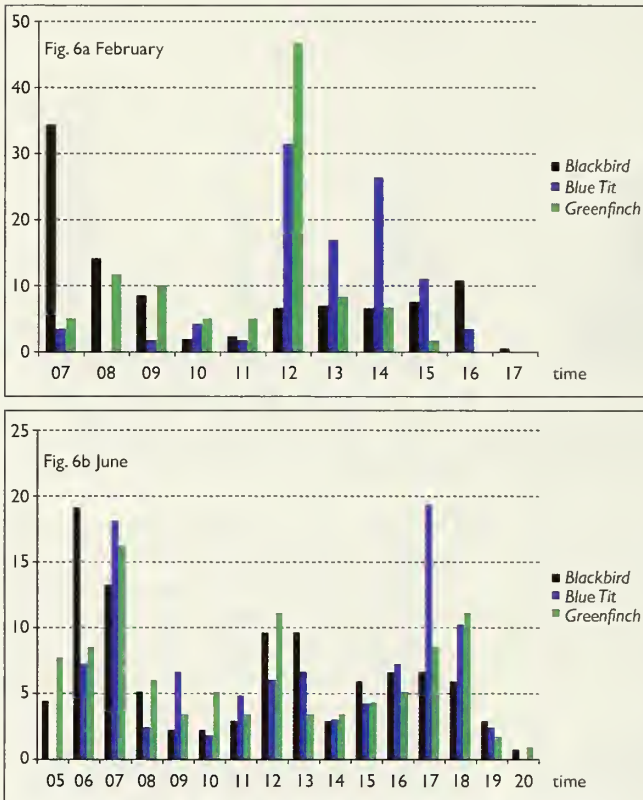


Fig. 6. Frequency of visits to birdbaths in a garden in northeast Essex throughout the day in February (6a) and June (6b) 2005 by Blackbird *Turdus merula*, Blue Tit *Cyanistes caeruleus* and Greenfinch *Carduelis chloris*.

March, rather surprisingly because these were the cold months in an otherwise mild winter and the feeders in the garden were especially busy. As the area is close to the coast, conditions in and around the garden were not as severe as elsewhere in the country and alternative sources of water may have remained accessible. There appeared to be three peaks in overall usage of the baths: in September (a generally warm, dry month), January (mild) and May–June (a period of short hot spells but no prolonged dry weather).

There were marked differences in the extent to which individual species used birdbaths for drinking and bathing. Some species, primarily seedeaters (Collared Dove, Greenfinch, Chaffinch), used birdbaths predominantly for drinking in both Essex and Devon and this pattern was observed in most months of the year. However, there were some notable differences between the results of the Essex and Devon studies. House Sparrows used water primarily for drinking in Devon, while in Essex birds were as frequently observed bathing as

drinking. In Devon, Dunnock, Blue Tit, Great Tit, Starling, Robin and Song Thrush were observed more often drinking than bathing, whereas in Essex these species were observed bathing significantly more often.

Blackbird, Blue Tit and Chaffinch all drank more in winter than at other times of the year. This may reflect their increased reliance during the winter months on seeds and artificial foods, rather than on invertebrates, which would supply some of their needs for water. The greater frequency of visits to the birdbaths in winter by Blackbird and Chaffinch may be a reflection of greater numbers in the garden at this time. For example, 22 Blackbirds were counted together in the garden on 30th January 2005. The spring peaks, primarily for bathing, shown by Dunnocks, Great Tits and Robins may indicate the need of incubating birds to refresh plumage and/or visits by juveniles. Other species showed no clear seasonal patterns in visits.

The non-systematic collection of data did not allow a detailed examination of patterns of water usage through the day but data for three species (Blackbird, Blue Tit and Greenfinch) in two months (February and June) demonstrate that significant species and seasonal differences occur (fig. 6). Blackbirds were notable for their early morning visits. Robins were noted for bathing in the evening when it was almost dark, especially so in the autumn (data not shown) and this behaviour has also been commented on by Hancock (1965). The use of birdbaths through the day is likely to be strongly influenced by the way birds use the garden. Species such as Blackbird and Robin were more or less resident, whereas flocks of tits roamed more widely for food. Nevertheless, tit flocks were present at feeders constantly in February but there were still peaks in birdbath use at certain times of day.

Birds were observed to drink and bathe in groups frequently and mixed-species bathing was often involved, even with generally aggres-

sive species such as Robin (see 'Mixed bathing', p. 525). Flocking species such as the tits, Greenfinches, House Sparrows and Starlings appeared to stimulate one another to bathe. Summers-Smith (1963) commented on the social bond within House Sparrow flocks, with individuals simultaneously adopting the same behaviour.

We observed dew-bathing on the lawn and among foliage on 25 occasions, involving ten species, during late summer and early autumn. We suggest that this is a frequent activity at this time of year but there are few reports of this behaviour. It has been reported previously in Common Chiffchaff (Cornish 1951), Wren *Troglodytes troglodytes* (Armstrong 1955), Song Thrush and Blackbird (Simms 1978), Sand Martin *Riparia riparia* (Oliver 1979), Willow Warbler (Spencer 1982), Dunnock (Bishton 1984), and Blackcap *Sylvia atricapilla* (Glue 1985; Mason 1995). Verbeek (1962) reported dew-bathing in a number of North American passerines.

The pond attracted far fewer visits than either birdbath, and from a smaller range of species. As the pond was situated close to cover, birds may have perceived a risk of attack by ground predators, especially cats. However, two larger ponds, sited away from cover elsewhere in the garden, were also used only infrequently and by a small range of species, though their position prevented regular observation. In contrast, the birdbaths were in almost constant use. The Near birdbath, situated immediately adjacent to evergreen cover, was used significantly more often than the Far bath, especially by smaller species. Since the bathing area was 70 cm high, ground predators were likely to pose little threat at either bath. Aerial predators, in particular Eurasian Sparrowhawks *Accipiter nisus*, may have presented a risk and the Near bath would have allowed for a more rapid departure into cover should a hawk appear. Only Magpies, perhaps unlikely prey for a Sparrowhawk, preferred the Far bath and this may have been more related to the species' wariness of humans. Of the five species showing no preference for either birdbath, only Song Thrush and Starling were likely to fall ready prey to Sparrowhawks. Sparrowhawks were almost daily visitors to the garden and during the

winter they harried birds at feeders regularly during the day, frequently making kills. However, we never witnessed a kill of a bird at water during this study, although we have seen both a Starling and a Blackbird killed at the pond in earlier years.

Burton (2005) remarked that few birds used his birdbath until he placed it close to an evergreen tree. In contrast, Anon. (2005) recommended that a birdbath be sited at least 2 m from surrounding cover to be safe from predators, though no evidence for this suggestion was provided. We strongly disagree with this statement. To provide access to water for a range of bird species, we recommend the provision of a pedestal birdbath, rather than a pond, placed as close as possible to evergreen cover. For the human observer, the visitors to the birdbath provide as much entertainment as those to feeders.

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281. Blackcap *Sylvia atricapilla* at garden pond, Kent, July 1993.

Tim Loseby



282. Goldfinch *Carduelis carduelis* at birdbath, Cambridgeshire, April 2006.

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Looking back

Seventy-five years ago:

'GREAT SPOTTED WOODPECKERS BORING IN TELEPHONE POLES. IN June, 1931, the Inspector of the Post Office Engineering Department at Yeovil, Somerset, informed me that he had to renew three telephone poles at Chilton Cantelo, near Yeovil, owing to their being rendered unsafe by woodpeckers boring into them.

'After they were brought in I purchased one of these poles, and found that the damage done was clearly the work of Great Spotted Woodpeckers (*Dryobates m. anglicus*). The pole was 24 ft. high and carried only one

crossbar with one pair of wires. Besides numerous small workings there were six holes of considerable size in it, the depth of the holes varying from about 1 in. to 1 ft. The top hole was just below the crossbar and only 1 ft. down from the extreme top of the pole; the other holes were about 15 ins. apart below each other, the bottom one being the deepest. The pole was considerably rotten inside and some of the holes must have been there for some time. There was no evidence that the birds had bred in the deepest hole at the bottom. C. J. PRING.' (*Brit. Birds* 25: 131–132, October 1931)

Conservation research news

Compiled by Andy Evans and Len Campbell



The impact of the bird trade on threatened species

There are 354 species of parrot (Psittacidae) in the world, of which 129 (36%) are listed as Threatened or Near Threatened by the IUCN. Of these, 71 (55%) are threatened to some extent by trade. Proponents of the wild-bird trade often put forward the argument that bans force the trade underground where it cannot be regulated. An alternative hypothesis is that, because much of the illegal trade in wild birds is laundered through legal channels, bans will reduce both legal and illegal trade. Two recent, important papers have produced data showing unequivocally that legislation imposing trade restrictions can benefit parrots through increasing nesting success and, in one critically endangered species, has resulted in a population increase. Pain *et al.* (2006) collated data from published and 'grey' literature on rates of parrot 'nest take' (i.e. removal of nestlings by humans for legal or illegal trade). They looked at 17 species from Africa, Asia and Australasia. Nest take was negligible in Australia, where both local and national protection measures were in place. In less developed countries, nest take ranged from 0 to 100%. In these countries, the authors show that a medium (local or national) or high (both local and national) level of protection resulted in an eight-fold drop in nest take and a corresponding 2.7-fold increase in nesting success.

The Citron-crested Cockatoo *Cacatua sulphurea citrinocristata* is endemic to the island of

Sumba, Indonesia. In 1992 it was classified as Critically Endangered, with a population of 3,200 and an estimated legal export of 1,600 birds per year. Legal trade ceased in 1994 and in 2004 the species was placed on CITES Appendix 1, effectively banning all trade. Cahill *et al.* presented results of a detailed resurvey of the population in 2004, ten years after trade ceased, and these show that the population density doubled over this period. Illegal trade unfortunately continues, but at a low level.

These papers make an important and timely contribution to a highly topical debate. The European Commission is currently considering relaxing the global EU ban on the wild-bird trade, enforced in October 2005 in response to biosecurity fears over avian influenza. Prior to this, the EU was responsible for more than 60% of global imports of parrots. These studies suggest that continuation of the ban would have a positive impact on their conservation status.

Pain, D. J., Martins, T. L. F., Boussekey, M., Diaz, S. H., Downs, C. T., Ekstrom, J. M. M., Garnett, S., Gilardi, J. D., McNiven, D., Primot, P., Rouys, S., Saoumoé, M., Symes, C. T., Tamungang, S. A., Theuerkauf, J., Villafuerte, D., Verfaillies, L., Widmann, P., & Widmann, I. D. 2006. Impact of protection on nest take and nesting success of parrots in Africa, Asia and Australasia. *Anim. Conserv.* 9: 322–330.

Cahill, A. J., Walker, J. S., & Marsden, S. J. 2006. Recovery within a population of the Critically Endangered Citron-crested Cockatoo *Cacatua sulphurea citrinocristata* in Indonesia after 10 years of international trade control. *Oryx* 40: 161–167.

Are long-distance migrants threatened on their wintering grounds?

In the last few years, a considerable amount of evidence has been published from studies within the UK and more broadly across Europe to show that breeding populations of many resi-

dent and migrant species have declined. In many cases, changes in agricultural practices in the breeding areas have been shown to be a major factor and suitable measures have been

identified and adopted to reverse the trends. However, declines have also been recorded among species in other habitats, notably woodland, where changes in management over the last 50 years appear to have been less dramatic than in farmland. This has again focused attention on the possibility that factors on the wintering grounds may also be adversely affecting migrant breeding species.

Using data collected by BirdLife International for its *Birds in Europe* project, Fiona Sanderson and her co-authors were able to analyse and compare trends among a wide range of resident and migrant species from countries throughout Europe. Trends within two periods (1970–1990 and 1990–2000) were assessed and found to be broadly similar. Overall the mean trend for long-distance migrants was negative (significantly so in the first period) and significantly more negative in both periods than for short-distance migrants and resident species. To minimise the possible effects of the different range of species included in the long-distance migrant and other categories, 30 pairs of closely related species were selected, one of which was a long-distance migrant (e.g. Tree Pipit *Anthus trivialis* and Garden Warbler *Sylvia borin*), the other a resident or short-distance migrant (e.g. Meadow Pipit *Anthus pratensis* and Blackcap *S. atricapilla*). The long-distance migrants declined

significantly in both time periods and significantly more so than the resident and short-distance migrants. This difference was irrespective of whether or not both species in the pair bred in the same habitat and was most marked for those where one of the pair wintered in arid open areas in Africa. A separate analysis of data for species that winter in Africa showed that those wintering on dry open habitats declined significantly more in both periods than all those using other habitats grouped together.

This work clearly demonstrates that, when compared with short-distance migrants or resident species breeding in Europe and irrespective of breeding habitat, those that undertake long-distance migrations, particularly to Africa, have declined more consistently and severely over the last 30 years. Although, as the authors suggest, this could simply be because they are for unknown reasons less able to adapt to changes on the breeding grounds than resident species, the markedly greater declines in those wintering in arid parts of Africa gives a strong indication that change on the wintering grounds may be very important. Desertification in the Sahel, as a result of agricultural pressures coupled with drought, has previously been shown to be linked with fluctuating migrant populations, for example during the drought of the 1980s, and this indicates what some of the factors may be behind these longer-term trends.

However, very little is known about the wintering ecology of these species and much remains to be done before it will be possible to assess what measures might be taken to halt and reverse such declines. While action to improve conditions within the European breeding grounds remains essential, increased attention must be given to stopover sites and especially the wintering grounds of long-distance migrants.

Sanderson, F.J., Donald, P.F., Pain, D.J., Burfield, I.J., & van Bommel, F.P.J. 2006. Long-term population declines in Afro-Palearctic migrant birds. *Biol. Conserv.* 131: 93–105.



283. Long-distance migrants such as this Tree Pipit *Anthus trivialis* appear to have declined more than comparable short-distance migrants over the last three decades, suggesting that factors on the wintering grounds and on their migration routes may be important.

Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the BB Editorial Board. Those considered appropriate for BB will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Common Eiders and Common Guillemots taken by Killer Whales

A recent note by William E. Smith described moulting Common Eiders *Somateria mollissima* being devoured by Killer Whales *Orcinus orca* in Shetland in 2005 (*Brit. Birds* 99: 264). Further instances of the same behaviour in the Northern Isles have recently come to light.

In Orkney, on 14th August 2003, Bruce Omand was working in a field at Stembister, overlooking Clivie Bay, East Mainland, when he saw a pod of 7–8 'Orcas', including an adult male, approaching a flock of moulting Common Eiders. As the Eiders attempted to move away, they were headed off by the adult male and then several of the Orcas dived, emerged in the middle of the Eider flock and grasped some of the ducks in their mouths. As other ducks tried to escape, the whales flicked

them into the air with their tails. Another sighting of Orcas attacking birds was reported in *The Orcadian*. On 3rd July 2004, L. Rowland saw Common Guillemots *Uria aalge* taken by Orcas from the surface of the sea below the cliffs of the large seabird colony at Marwick Head, West Mainland. Unfortunately, no further details of this occurrence are available.

In Shetland, on 23rd June 2006, PME watched a female Killer Whale pursue a brood of five tiny Eider ducklings close inshore along a pebble beach at Mail, Cunningsburgh. The two accompanying female Eiders managed to escape. On the first lunge, the Orca caught one duckling; it then turned quickly, lunged again and caught two more in one mouthful. The other two ducklings were assumed to have escaped.

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Common Kingfisher eating newts

On 11th March 2006, at Rutland Water, Leicestershire, a Common Kingfisher *Alcedo atthis* appeared on a perch in front of one of the hides at the Eggleton reserve. It was carrying prey, which upon close observation turned out to be a newt (Salamandridae). The Kingfisher battered its unfortunate victim hard on the perch for a minute or so before manoeuvring it and swallowing it head first. After diving into the water several times to bathe, it flew off and

returned five minutes later with a second newt, which received the same treatment as the first. From their small size, the newts were probably Smooth Newts *Triturus vulgaris*, although Great Crested Newts *T. cristatus* also occur in this lagoon. *The Handbook* contains one record of newt being taken, although BWP does not specifically mention newts as a food item of the Common Kingfisher, mentioning only frogs *Rana* specifically.

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Breeding population estimate for Northern Wheatear in Britain

The 1988–91 Breeding Atlas gave the number of Northern Wheatears *Oenanthe oenanthe* breeding in Britain as 55,000 pairs (Conder 1993), a figure which seems to have been accepted without comment or qualification in subsequent summaries of the species' status in Britain (e.g. Clement 1997, Stone *et al.* 1997,

Mead 2000, Baker *et al.* 2006). The purpose of this note is to highlight a number of points which suggest that that estimate may be too small by a substantial margin.

An indication that the figure of 55,000 pairs may not be correct first came to light while trying to estimate how many Northern

Wheatears breed in Caithness. This region constitutes approximately 1.6% of the species' British range (28 occupied 10-km squares, from a national total of 1,738 occupied such squares), which, given that densities in Caithness appear to be around the national average (see density distribution map in Conder 1993), suggests a population of about 900 pairs. Northern Wheatears are generally considered to be common in Caithness, but a figure of this magnitude would rank the species with birds such as Common Eider *Somateria mollissima*, Common Pheasant *Phasianus colchicus*, House Martin *Delichon urbicum* and Great Tit *Parus major*, all species which I believe are better regarded as no more than 'fairly common' in Caithness.

A second indication that the 1988–91 Breeding Atlas figure may be too small comes from Shetland, where a recent survey based on selected 1-km squares gave a population estimate of some 6,700–10,000 pairs, which equates to 12–18% of the British population (Pennington *et al.* 2004). There is no doubt that Shetland holds relatively high densities of Northern Wheatears, but so do a number of other parts of Britain (for example the north-west Highlands, Inner and Outer Hebrides, Grampians and Southern Uplands in Scotland; the Lake District and southern Pennines in England; and the Cambrian Mountains in both North and Mid Wales. All the areas mentioned above are similarly classified as having the highest level of relative abundance in Conder's density distribution map), and it seems unlikely that the proportion in Shetland is really as high as 12–18% of the British population.

It is also instructive to compare the population estimate for Britain with those for other European countries (table 1). The mean densities shown were calculated as the number of breeding pairs divided by the number of occupied 50-km × 50-km cells (as used in the EBCC Atlas) expressed relative to the figure for Britain (data from Hagemeyer & Blair 1997). The fact that Britain has a density at the bottom of the range of, or substantially less than, the other countries listed (except Greece) does not appear consistent with the densities shown in Hagemeyer & Blair's (1997) map for Northern Wheatear. It is worth commenting, in passing, that the relative density (and hence the population estimate) for Norway looks anomalously high.

Indirect and rather crude though these arguments are, they suggest that the figure of 55,000 pairs is an underestimate. It was derived by multiplying the number of 'breeding evidence' 10-km squares by the mean density per occupied 10-km square. The figure for the latter (40 pairs) had been taken from the 1968–72 Breeding Atlas (Sharrock 1976) and was based on the assumption of one-tenth of the density (4 pairs/km²) found on a Westmorland farm. No justification was given for the 'one-tenth' figure, and, with the benefit of hindsight, it is clear that it is not well founded. A somewhat better figure can be estimated from the figures for Shetland quoted above. Northern Wheatears occupied 48 10-km squares in Shetland according to the 1988–91 Breeding Atlas, giving a mean density of 140–210 pairs per 10-km square (figures rounded to nearest 10). Densities in Shetland seem to be roughly double

Table 1. Northern Wheatear *Oenanthe oenanthe* population estimates in western Europe.

Country	No. breeding (thousands of pairs)	Range of occupied cells *	Density relative to Britain	Density [†] (EBCC map)
Norway	1,000–2,000	153	13–26	–
Spain	340	137–150	4.7–5.2	–
Finland	200–300	165	3.2	H
Sweden	100–500	211	1.0–5.0	I
Bulgaria	50–500	51	2.0–20	I
Italy	100–200	88–110	1.9–4.8	I (N. Italy)
Romania	50–200	95	1.1–4.4	I
Belarus	60	48–81	1.5–2.6	I
Britain	55	115	1	H (Scotland) L–I (England & Wales)
Greece	30	92–100	0.6–0.7	L–I

* Number of occupied 50-km × 50-km cells; upper and lower limits quoted for Spain, Italy, Belarus and Greece take into account cells not surveyed.

† Estimated from map in Clement (1997); L=low; I=intermediate; H=high.

those elsewhere (see density distribution map in Conder 1993), which suggests a national mean density of some 70–105 pairs per 10-km square. Since there were 1,738 occupied 10-km squares nationally in 1988–91, this yields a suggested revision to the population estimate for Northern Wheatear in Britain (rounded to the nearest 100,000) of 100,000–200,000 pairs.

Average population density across the whole of a species' British range is not easy to estimate, especially from habitat-specific or local densities. It is quite likely that population estimates for other species that have been derived in the same way as for the Northern Wheatear are in error. That for the Twite *Carduelis flavirostris* quoted in the earlier compilation of the Avian Population Estimates Panel (Stone *et al.* 1997) was subsequently shown to be too high using arguments similar to those deployed here (see Clark & Sellers 2001), and this has since been substantially confirmed by

survey (Baker *et al.* 2006).

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EDITORIAL COMMENT Paul Harvey, manager of Shetland Biological Records Centre, has commented: 'The figures given in *Birds of Shetland*, quoted above, were based on just one year's data (in 2002, when 49 1-km squares were surveyed), from which the Shetland population of Northern Wbeatars was estimated to be 8,176 pairs. Following three more seasons of fieldwork, the mean annual estimate (2002–05) is slightly higher, at 9,811 pairs (number of 1-km squares surveyed annually ranging from 49 to 65). The Shetland population is therefore apparently still within the range of 7,500–10,000 pairs quoted above, but these more recent figures add weight to the suggestion that the British Northern Wheatear population has been underestimated in the past.'

Male Common Chaffinches apparently trying to mate with incapacitated female

A small flock of Common Chaffinches *Fringilla coelebs* is resident in my garden in Cumbria during the winter months. At about 13.05 hrs on 12th March 2006, and with the whole garden blanketed in snow, a female from this flock flew into a first-floor window and fell to the ground immediately below, where she lay prone, with her wings slightly spread and gaping every few seconds. Within about 30 seconds, five male Chaffinches, which had been feeding on the ground some 5 m away, flew to the female and landed in a semicircle round her, about 20–30 cm away. First one, then a second of these males

flew to the female and stood briefly on her back, before all five flew off. Four minutes later a male returned and repeated this extraordinary behaviour. The female's gaping then ceased, she drew in her wings, and began looking around, but did not fly off for another ten minutes. She appeared to have been winded after hitting the window. It is difficult to see the males' behaviour as anything other than attempted mating, presumably prompted by their misinterpreting the female's fall to the ground, passive disposition and slightly spread wings as a form of 'solicitation' display.

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News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

The Great Crane Project

The reintroduction bandwagon rolls on. The ninth British bird species in recent years to be subject to a reintroduction programme will be the Common Crane *Grus grus*.

The 'Great Crane Project' was unveiled at this year's Birdfair by the project partners RSPB, WWT, the Pensthorpe Conservation Trust and Jordans Cereals. The aim is to re-establish a breeding population of Common Cranes at a new wetland site 'securing its future as a breeding species'.

Common Cranes were formerly widespread in Britain; they appeared in medieval illuminated manuscripts (and on the menu for Henry III's feast at York in 1251) and are commemorated in place-names like Cranfield (Bedfordshire) and Cranbrook (Kent). But the drainage of extensive areas of wetland, together with hunting, caused them to disappear as a breeding bird from Britain by the start of the seventeenth century. However, after an absence of nearly 400 years, Common Cranes recolonised the Norfolk Broads – a former breeding site – in 1979. Successful breeding has continued ever since; indeed, a Crane nest was viewable from a public hide in Norfolk this spring, although it was not widely publicised. The Norfolk population is unusual in that it is resident, rather than migratory like all other Crane populations in Europe.

The backers of the Great Crane

Project portray the Norfolk birds as 'isolated and vulnerable' (although the population has held its own for nearly 30 years) and the three organisations concerned are now planning a conservation programme to re-establish Common Cranes at a new site. A shortlist of potential release sites is being drawn up, and techniques for rearing young Cranes are being investigated (Pensthorpe already has Cranes in its waterfowl collection near Fakenham, in Norfolk). The earliest release that could take place in Britain would be in 2009 and it is hoped that British-hatched Common Cranes would nest five years after that.

The RSPB's conservation director, Dr Mark Avery, said: 'Cranes capture the spirit of our great wetlands, and re-establishing them makes sense at a time when wetlands are being expanded and improved for the benefit of wildlife. The RSPB brings significant experience of reintroductions, and wetland habitat management, to this partnership. We can't wait to see Cranes gracing the skies once again.'

Dr Baz Hughes, head of species conservation for WWT, said: 'Cranes are fantastic ambassadors for wetland conservation. They are big, charismatic, noisy birds that can inspire people to support and get involved with conservation. We will use our 60 years of expertise to hatch and rear the young Cranes and develop new Crane exhibits at

our wetland centres in the UK.'

But what is so great about the Great Crane Project? At the last count we have ongoing reintroduction schemes for Red Kite *Milvus milvus*, Golden Eagle *Aquila chrysaetos*, White-tailed Eagle *Haliaeetus albicilla*, Osprey *Pandion haliaetus*, Black Grouse *Tetrao tetrix*, Great Bustard *Otis tarda*, Corn Crake *Crex crex* and Cirl Bunting *Emberiza cirlus*. Do we need yet another reintroduction?

One senior conservationist told N&c: 'We've created all these wetlands. Now we need to put something special on them.' Is that the rationale for reintroductions now? Then perhaps we should add White Pelican *Pelecanus onocrotalus* to the list – another spectacular species that once graced British wetlands.

Could the Common Crane be the latest weapon in an arms race developing between government and non-governmental organisations (NGOs)? Natural England (the rebranded English Nature, which began life on 1st October) has made reintroduction of White-tailed Eagles to East Anglia its flagship project. Now two heavyweight NGOs – RSPB and WWT – have announced that Cranes will be their headline-grabber of choice. Would the rapidly declining Northern Lapwing *Vanellus vanellus* be a more appropriate choice for resurrection through reintroduction? N&c would be interested to hear readers' views.

No legal protection for Sky Lark and Song Thrush

Here, they are Red-listed species of conservation concern, but some of our most cherished songbirds still have no legal protection whatsoever in one of the few countries where they still thrive. Now British birders have a chance to help to

change that.

Sky Lark *Alauda arvensis*, Song Thrush *Turdus philomelos*, Lesser Redpoll *Carduelis cabaret*, Yellowhammer *Emberiza citrinella* and Cirl Bunting are found in great abundance in New Zealand. These

species – plus a further eight passerines, including Dunnock *Prunella modularis*, Blackbird *T. merula*, Common Starling *Sturnus vulgaris* and House Sparrow *Passer domesticus* – were all introduced to New Zealand by homesick Euro-

pean settlers in the late nineteenth century.

The introduction of alien birds and mammals to New Zealand from Europe, Asia, Australia and North America has had a profound impact on native bird species (the only endemic mammals were three species of bat (Chiroptera), and one of them has not been seen since 1967) and the Department of Conservation (DoC) has done a heroic job to preserve endangered endemics on offshore, rat-free, islands.

Now, the DoC is reviewing the degree of protection afforded to certain birds and mammals under the 1953 Wildlife Act. Native species receive absolute legal protection but non-native species do not. For example, all the songbirds listed above appear on Schedule 5:

Wildlife Not Protected. But perhaps that status could change in the present review.

N&c was contacted by NZ writer and broadcaster Matthew Lark (yes, Lark), who has written a controversial article calling for full legal protection for these alien species as he believes that this is New Zealand's global responsibility. The DoC consultation runs until 3rd November and the full discussion document can be viewed at www.doc.govt.nz/pdfs/wildlife-protection-review.pdf. Matthew Lark says: 'Can I urge you to consider what your world and mine would be like without the sizzling sibilance of the Goldfinch *Carduelis carduelis* or the magical phrases of the thrush. You can help us to conserve both, by advocating their absolute protection. Do this,

and the New Zealand public, and your own offspring's offspring, may thank you in perpetuity.'

It certainly seems ironic that RSPB researchers travelled to the South Island of New Zealand in the 1990s to study the abundant Cirl Buntings before launching the recovery programme in southwest England. Maybe they should just have trapped all those unprotected birds and released them back home in the UK. If the NZ authorities can be persuaded that 'our' birds are worth protecting in their new home on the other side of the world, perhaps we should then be more zealous in protecting our feral Mandarin Duck *Aix galericulata* and Golden Pheasant *Chrysolophus pictus* that are now threatened species in their native China.

£10,000 reward offered following double eagle killing

In response to the poisoning of two Golden Eagles, RSPB Scotland, for the first time in its history, is offering a reward for information which leads to the arrest and conviction of the person(s) responsible for the poisoning of birds. Anonymous donors have boosted the reward to five times its original value – from £1,000 to £5,000 per bird.

The Northern Constabulary is currently carrying out inquiries into the poisoning of one of the eagles at the Glenfeshie Estate in the Cairngorms on 10th June. Grampian Police are also carrying out an inquiry following a similar death at Dinnert and Kinnord Estate near Ballater, on 13th May.

These crimes caused RSPB Scotland great concern and the society decided to put up a reward of £1,000 per crime for information which leads to the arrest and conviction of those responsible. The society hopes that this move will highlight the serious nature of this type of crime, as well as underlining the determination of RSPB Scotland and the police to detect those responsible and bring them to justice. It is understood that both eagles were poisoned by car-

bofuran, possession of which is in itself a crime.

After hearing that RSPB Scotland was offering up to £1,000 for each of the offences, both of which occurred within the boundaries of the Cairngorms National Park, a businessman contacted the charity and offered an additional £8,000 to the rewards. Another donor said that he would cover the charity's reward costs and pay the £2,000 already offered by RSPB Scotland.

The donor who offered a further £8,000 told RSPB Scotland: 'I simply cannot believe that anyone would wish to kill such a magnificent and awe-inspiring creature as a Golden Eagle. It is a sad and shameful state of affairs that some people judge it acceptable to carry out this practice in our society today. It is my hope that this donation will serve as a reminder how abhorrent the vast majority of right-thinking people view this activity, and help to stamp it out altogether.'

Duncan Orr Ewing, Head of Species and Land Management for RSPB Scotland, said: 'The fact that two people, both of whom were previously unknown to the RSPB and are not members, have been

motivated to approach us and offer £10,000 to help the appeal to catch these criminals is indicative of the public outrage at these crimes. We are grateful for their support and hope it leads to convictions in these deplorable cases.'

Anyone with any information about either crime is asked to contact the Northern Constabulary on (01463) 715555 or Grampian Police on (0845) 600 5700.

Rosy year for Roseates

The Roseate Tern *Sterna dougallii* colony on Coquet Island, off the Northumberland coast, has had another record year, with 94 nesting pairs rearing 105 chicks. This is despite egg-collectors taking a boat to the island in early June and stealing a clutch of Roseate Tern eggs from one of the special nestboxes that have made Coquet such a successful breeding site for this threatened seabird. As recently as 2000, there were just 34 pairs of Roseates on Coquet. To the north, one pair of Roseates again bred on Inner Farne this year.

Hen Harriers: best season for years but 60% killed illegally

After five years of English Nature's Hen Harrier Recovery Project, the organisation has some good news – and some bad news. The good news is that the 2006 breeding season has been the most productive in England since 2002, with 46 young fledged from 12 successful nests (six of them on the Bowland Fells, in Lancashire).

But that five-year dataset also reveals that, away from the safe haven of Bowland, on grouse moors in England nearly 60% of nesting attempts by Hen Harriers *Circus cyaneus* fail as a result of illegal persecution. The organisation's press statement says: 'Illegally persecuting Hen Harriers by scaring, destroying nests and eggs or deliberate killing was the main cause of their near-extinction in England, and English Nature's monitoring over the past five years shows that persecution remains the biggest reason for their continuing

low population. This year two adult birds disappeared from nests, behaviour that is almost unheard of naturally and is highly suspicious... Over the last five years no Hen Harriers have disappeared whilst breeding in Bowland, whereas on grouse moors elsewhere in England nearly 60% of nesting attempts fail as a result of adult birds disappearing... Hen Harriers still pose one of the trickiest conservation dilemmas in the UK; Hen Harriers eat Red Grouse *Lagopus lagopus*, amongst other things, and have been proven to affect numbers of grouse available for shooting. This undoubtedly provides the motivation for their illegal destruction. Yet grouse shooting has protected some of our rarest habitats and breeding birds, and funds the management these habitats require. If the Hen Harrier population is ever to fully recover, it will only be with the co-opera-

tion of grouse-moor owners and managers.'

Dr Mark Avery, the RSPB's Director of Conservation said: 'This beautiful bird remains far rarer than it should be in England. English Nature says that on grouse moors away from Bowland, 60% of nesting attempts fail because adults disappear during the nesting season. That's a damning statistic and the Hen Harrier's status is, frankly, an embarrassment for a country that is so proud of its natural heritage.

'The new government body responsible for wildlife and the countryside, Natural England, will really need to put some effort and money into positive land management and stopping the "disappearance" and illegal killing of Hen Harriers if this bird is to get back where it belongs, on the nation's moors.'

Gas extraction threatens Wadden Sea

BirdLife has lodged an appeal against a permit authorising natural-gas extraction in the Wadden Sea, the coastal shallows between the Frisian Islands and the Dutch/German coast. At 10,000 km², the Wadden Sea is the largest intertidal area in Europe and recognised by BirdLife as an Important Bird Area and by the European Union as a Natura 2000 site. But the habitat is already in poor condition, and gas extraction would cause further subsidence of the sands on which large numbers of migratory birds depend.

'This internationally important natural reserve is in a deplorable

state,' said Hans Peeters of BirdLife Netherlands. For this reason, the Dutch Government has drawn up a strategy for the preservation and restoration of the habitat, particularly the dry high sands, which are vital for birds like Red Knot *Calidris canutus* and Oystercatcher *Haematopus ostralegus*. 'The intended gas extraction will put pressure on this strategic objective,' Peeters explained. 'It is expected that up to 2024 a periodic deterioration of the surface of the high sands will take place. This decline will therefore hinder the natural restoration of the Wadden Sea for a longer period of time.'

To compensate for the drop in sand levels, sand from elsewhere along the coast would be dumped into the sea. This would suffocate the invertebrates on which birds like Common Scoter *Melanitta nigra* and Common Eider *Somateria mollissima* depend. 'Moreover, "sight hunters" will experience a continued hindrance owing to the murky, muddy water,' Peeters warned. 'The effect of sand supplementation has barely been investigated. Without a proper evaluation, the permit violates the European Birds and Habitats Directives and should not have been issued.'

Confirmation of Britain's only endemic

The status of Scottish Crossbill *Loxia scotica* as endemic to Britain is indeed justified, according to the results of a lengthy scientific study into the species, published recently. Scottish Crossbills differ in bill size from other crossbill species found

in Britain and also have a distinct call.

Although the BOU has classified Scottish Crossbill as a separate species since 1980, many ornithologists preferred to reserve judgement, believing that there was

insufficient scientific research for its formal acceptance. Scotland's conifer woods are home to three crossbill species: Common Crossbill *L. curvirostra* (with a small bill best suited to extracting seeds from the cones of spruce *Picea* trees),

Parrot Crossbill *L. pytyopsittacus* (with a large bill suited to extracting seeds from the cones of pine *Pinus* trees) and Scottish Crossbill (with an intermediate-sized bill used to extract seeds from several different conifers).

All three are extremely similar in terms of both plumage and morphometrics, and DNA analysis shows that the birds are genetically similar, casting some doubt on the Scottish Crossbill's status as a distinct species. But a detailed study of calls, carried out by RSPB Scotland researchers, has found that Scottish Crossbills (as identified by bill size) also have quite distinct flight and excitement calls from other crossbills.

However, the most important evidence has come from the RSPB's long-term field research in the Highlands, which investigated whether crossbills choose mates with a similar bill size and call; and whether young Scottish Crossbills inherit bill size from their parents.

Results showed that, of 46 pairs of crossbills of all types, almost all the pairs were closely matched for bill size and calls. In other words, the different types of crossbills were behaving as distinct species. The small number of 'mismatched' pairs was too few to suggest that the different types are *not* species, yet enough to account for the overall genetic similarity. Furthermore, the fact that young crossbills had bill sizes similar to their parents showed that bill size was inherited, and this also supports the specific status of Scottish Crossbill.

Although the three species differ in average bill size, the actual differences are small and cannot be used reliably in the field to identify crossbills. However, the calls can be distinguished by sonograms. This provides the basis for a method to survey crossbills and, for the first time, gain a clear picture of their numbers and distribution in Scotland. The current estimate of 1,500

birds for the global population of Scottish Crossbill is little better than a guess and the first full survey of the numbers and distribution of Scottish Crossbills is scheduled for 2008.

RSPB Scotland's senior researcher, Dr Ron Summers, who led the study, said: 'The question of whether the Scottish Crossbill is a distinct species, and therefore endemic to the UK, has vexed the ornithological world for many years and split the birdwatching community. This research proves that the UK is lucky enough to have a unique bird species that occurs here and nowhere else – and this is our only one. This is very significant. Now that we have shown the Scottish Crossbill exists, and is endemic, we must focus our conservation efforts in making sure that it not only survives, but flourishes, and that Scotland has plenty of the habitat that supports and maintains the population of these birds, of which we should be justly proud.'

Bald Ibises keep on tracking

One good news story to emerge from the Middle East in recent months has been the successful satellite-tracking of the Bald Ibis *Geonticus eremita* trio from Syria (*Brit. Birds* 99: 498–499). Having reached Yemen in August, the birds have now crossed the Red Sea and flown on to central Ethiopia. Chris Bowden, the RSPB's Bald Ibis expert, having spent many years

working on the Bald Ibises in Morocco and the Middle East, said: 'Being able to find out where the ibises spend the winter is something I feared we might never know for sure. Old records from Eritrea and Ethiopia meant that those countries were possibilities, and it came as something of a surprise that our tagged birds spent over three weeks in Yemen (where

there were also a few records in the 1980s). Just when we began to think they might stay there, they shot across the Red Sea to central Ethiopia! Whether they will settle in an area remains to be seen – I rather hope they do, so that conservation efforts can focus on wherever that may be.'

Bitter pill in sugar shutdown

The closure of two sugar factories could have a devastating impact on one of England's most rapidly declining farmland birds, according to the RSPB. Northern Lapwings are attracted to farms growing sugar beet, nesting and foraging on the bare earth between plants in the spring and summer and feeding on the stubbles in winter. But their habitat is under threat following recent reforms to the heavily subsidised EU sugar industry, intended to reduce its

high cost and its negative impact on developing countries. As a result of the reforms, British Sugar has announced the closure of two of its factories, one in York and the other at Allscott in Shropshire.

The RSPB supported the reforms but throughout the process had called for them to be accompanied by measures to offset the negative impacts on wildlife. Now, as farmers in the affected areas consider giving up on sugar beet completely, the RSPB is again

calling on the Government to provide them with a viable, Lapwing-friendly alternative. A study in Shropshire found that late in the nesting season, sugar beet was home to seven times more breeding pairs of Lapwings than fields of winter-sown cereals.

Salvation for the birds could come in the shape of Government grants under the Higher Level Stewardship Scheme (HLS). This would reward farmers for persisting with spring-sown crops, for

maintaining winter stubble and for leaving fields fallow for birds to nest in. Not only would this ensure a future for Lapwings on these farms, it would also boost the

incomes of farmers hurt by the factory closures. However, months of wrangling between Brussels and Westminster means that the money for the scheme still has not been

secured. Unless it can be found soon, affected farmers are likely to turn their fields over to winter-sown crops, to the detriment of England's Lapwings.

Wing-tagged Montagu's Harriers

If you see a wing-tagged Montagu's Harrier *Circus pygargus* in Africa this winter or in Europe next summer, it may be an 'orphan' from Spain. AMUS (www.amus.org.es) is a conservation organisation and recuperation centre in Extremadura that specialises in rearing and releasing

Montagu's Harrier chicks that have suffered nest destruction by combine harvesters. A total of 74 chicks were reared this summer and have been released with bright green plastic tags on the right wing. Birds were seen in Morocco in early September and may be sighted elsewhere in western or

west-central Africa over the next few months. In addition there are some older birds with one or two tags with a combination of letters and colours. Any information on sightings and colour combinations of wing tags would be very useful; please contact Fergus Crystal by e-mail: ferguscrystal@yahoo.co.uk

Requests

Turkey Bird Report 2002–06

Preparations are being made for the compilation of the tenth Turkey Bird Report, which will cover the period 2002–06. Once again, the report will be produced by an Anglo-Turkish team, comprising Barbaros Demirci, Metehan Özen and Guy M. Kirwan, and published in *Sandgrouse*. Many records have already been received and there is no need for these to be sent again, but we do urge any observers with unpublished or published records for the period 2002–06 to contact any member of the editorial team, either via GMKirwan@aol.com, or by writing to: Turkey Bird Report, OSME, The Lodge, Sandy, Bedfordshire SG19 2DL. It would be helpful if observers were able to consult the most recent report, covering 1997–2001 (*Sandgrouse* 25: 8–31), wherein details of those species for which records are particularly sought can be found. Trip reports are nonetheless welcome, as are photographs, both as documentation and for possible publication in the report. Anyone requiring further details is welcome to contact the editors.

Wanted – details of plover flocks

If you see any large flocks of European Golden Plovers *Pluvialis aprinaria* or Northern Lapwings this winter, the BTO wants to know. The last count, in October 2003, only scratched the surface in terms of areas covered and it is hoped that this survey will spread the net wider and provide better insights into the numbers of these species wintering in Britain. The main count periods are around 8th October, 19th November, 17th December, 21st January and 18th February. If you see flocks of 100 or more plovers within a week of any of these dates, please submit your sightings online via the Casual Records link at www.bto.org/goto/winter-plovers.htm. Make your birding count!

Rook roosts and rookeries

As part of my research into British Rook *Corvus frugilegus* roosts, I am keen to try to identify the oldest roosts, particularly extant roosts. A paper in *Scottish Birds* in 1971, by J. H. B. Munro and entitled 'Scottish Winter Rook Roosts Survey', listed a roost site at Conon House estate in Ross & Cromarty that was said to be 120 years old. If anyone can shed light on its continued existence or otherwise, and also the identity of T. Barron, whose correspondence is cited as proof of its age, I would be extremely grateful. Three other possible candidates for the oldest extant British winter roost are in Caithness: at Barrock House, Lyth, Castletown; Garth, Olrig; and Loch Scarmlett, Halkirk. I am also keen to hear of any other candidate sites, preferably with extant roosts and documentary proof of age. Similarly, I wish to locate British rookeries that are in excess of 200 years old. All help will be acknowledged in my forthcoming book. Please contact Mark Cocker, The Hollies, The Street, Claxton, Norwich NR14 7AA; tel. 01508 480546; e-mail markcocker@onetel.com

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mid August to mid September 2006.

Blue-winged Teal *Anas discors* Hanningfield Reservoir (Essex), 20th August. **Ferruginous Duck** *Aythya nyroca* Croxall Gravel-pits, 11th August, same Blithfield Reservoir (both Staffordshire), 12th August to 7th September; Chew Valley Lake (Somerset), 20th August; Vane Farm (Perth & Kinross), 27th August. **Lesser Scaup** *Aythya affinis* Loe Pool (Cornwall), 28th August.

Zino's/Fea's Petrel *Pterodroma madeiralfeae* In August, singles were seen off Bridges of Ross (Co. Clare) on 21st, 23rd and 29th, and off Galley Head (Co. Cork) on 22nd, Brandon Point (Co. Kerry) on 25th and Cape Clear Island (Co. Cork) on 31st. **Great Shearwater** *Puffinus gravis* A significant passage was noted off the west coast of Ireland in late August, the peak count being 4,493 past Annagh Head (Co. Mayo) on 27th. **Little Shearwater** *Puffinus assimilis* Pendeen (Cornwall), 20th August; Bridges of Ross, 28th August; Kilcummin Head (Co. Mayo), two together, 29th August. **Wilson's Storm-petrel** *Oceanites oceanicus* Seen from pelagic trips off Scilly on the following dates in August: 13th, 14th (three), 20th (five), 21st (three), 28th, 30th (two), and one from MV *Scillonian* on last date. Singles were also seen off Dingle (Co. Kerry), 8th August; Bridges of Ross, 28th August; Cape Clear Island, 4th September; Brandon Point, 6th September; Hartlepool Headland (Cleveland), 7th September.



284. Adult American Golden Plover *Pluvialis dominica*, Ness, Lewis, Western Isles, September 2006.

Night Heron *Nycticorax nycticorax* Cresswell Pond (Northumberland), 8th August; Weir Wood Reservoir (East Sussex), 29th August to 7th September. **Cattle Egret** *Bubulcus ibis* Earls Barton (Northamptonshire), 11th–12th August; two, Stanpit Marsh then Hengistbury Head (Dorset), 9th September. **Great White Egret** *Ardea alba* Hackford Hall (Norfolk), 13th August; Strumble Head (Pembrokeshire), 4th September; Beachy Head (East Sussex), 11th September. **Purple Heron** *Ardea purpurea* Portland Bill (Dorset), 16th August; Stanpit Marsh, 26th August; Dungeness (Kent), 30th August. **Black Stork** *Ciconia nigra* Luccombe Down (Isle of Wight), 22nd August; Church Cove then Porthgwarra (Cornwall), 27th August. **Glossy Ibis** *Plegadis falcinellus* Radipole Lake (Dorset), 8th September.

Red-footed Falcon *Falco vespertinus* Orford Ness (Suffolk), 18th August; Minsmere (Suffolk), 3rd–9th September.

Kentish Plover *Charadrius alexandrinus* Ferrybridge (Dorset), 10th August; Dovey estuary (Ceredigion), 22nd–24th August; Thurlestone (Devon), three, 29th August with one to 9th September; Dawlish Warren (Devon), 9th–11th September. **Dotterel** *Charadrius morinellus* Strong passage in late August, including 14 at Buckton (East Yorkshire), 24 at Coom Hill (East Yorkshire), 12 near Deal Hall (Essex), 13 near Sutton Bridge (Lincolnshire), 51 at Terrington Marsh (Norfolk) and at least 36 at Choseley



285. Spotted Sandpiper *Actitis macularia* (left), with Common Sandpiper *A. hypoleucos*, Nethertown, Co. Wexford, September 2006.

Nic Hallam



286. Juvenile Long-tailed Skua *Stercorarius longicaudus*, Queen Mother Reservoir, Berkshire, September 2006.

Stef McElwee



287. Adult Bonaparte's Gull *Larus philadelphia*, Newbiggin, Northumberland, September 2006.

John Malloy



288. Juvenile European Roller *Coracias garrulus*, South Gare, Cleveland, August 2006.

(Norfolk). American Golden Plover *Pluvialis dominica* Tiree (Argyll), 29th August to 3rd September; Lewis (Western Isles), 9th September. Pacific Golden Plover *Pluvialis fulva* Snettisham (Norfolk), 17th–18th August; Tiree, 29th August to 2nd September.

Semipalmated Sandpiper *Calidris pusilla* On Scilly, one on Bryher on 1st September, presumed same on St Agnes 3rd–6th September and St Mary's 4th–5th September; Ballycotton (Co. Cork), 2nd September; Lis-sagriffin (Co. Cork), 3rd September; Smerwick Harbour (Co. Kerry), 3rd–5th September, with two on 5th and one or other to 6th; Keyhaven Marshes 4th–5th September, Normandy Lagoon 9th–10th September, Pennington Marshes (all Hampshire) 11th September; Blennerville (Co. Kerry), 5th September. White-rumped Sandpiper *Calidris fuscicollis* Snettisham (Norfolk), 13th August; East Chevington (Northumberland), 15th–22nd August; Tresco (Scilly), 31st August to 5th September, presumed same St Agnes, 1st September; Burnham Lagoon, Dingle (Co. Kerry), 3rd September; Ventry (Co. Kerry), 4th September; Trabeg (Co. Kerry), 5th September. Baird's Sandpiper *Calidris bairdii* Unst (Shetland), 17th August; Lady's Island Lake (Co. Wexford), 2nd September; Hayle estuary (Cornwall), 7th–10th September. Stilt Sandpiper *Calidris himantopus* Brownsea Island (Dorset), 12th–21st August. Broad-billed Sandpiper *Limicola falcinellus* Aberlady Bay (Lothian), 19th–20th August; Port Carlisle (Cumbria), 24th August. Buff-breasted Sandpiper *Tryngites subruficollis* South Uist (Western Isles), 17th–31st

Recent reports

August, with two 7th–9th, and one 10th September; in Norfolk, Holme/Titchwell 17th August, Warham Greens 19th August and Great Yarmouth 23rd August, perhaps all the same; Tiree, 29th August. **Long-billed Dowitcher** *Limnodromus scolopaceus* Shannon Airport Lagoons (Co. Clare), 28th July to 3rd September. **Spotted Sandpiper** *Actitis macularius* Nether-town (Co. Wexford), 5th–6th September.

Laughing Gull *Larus atricilla* Brora (Highland), 13th August; Lune estuary (Lancashire), 19th August. **Franklin's Gull** *Larus pipixcan* Whitehouse Lagoon (Co. Antrim), 6th August; Blithfield Reservoir (Staffordshire), 9th–10th August; Ythan estuary (Northeast Scotland), 21st–27th August. **Bonaparte's Gull** *Larus philadelphia* East Chevington, 4th September; Newbiggin (Northumberland), 8th–10th September; Slimbridge (Gloucestershire), 10th September. **Ross's Gull** *Rhodostethia rosea* Tiree, 9th August. **Gull-billed Tern** *Gelochelidon nilotica* Salthouse (Norfolk), 16th August; Cley (Norfolk), 27th August. **White-winged Black Tern** *Chlidonias leucopterus* Minsmere, 8th August; Shapwick Heath (Somerset), 20th August.

Pallid Swift *Apus pallidus* St Mary's, 8th August. **European Roller** *Coracias garrulus* South Gare (Cleveland), 18th August. **Red-rumped Swallow** *Cecropis daurica* Hoswick (Shetland), 28th August to 8th September; Castle Carrock (Cumbria), 9th September. **Tawny Pipit** *Anthus campestris* St Mary's, 1st September; Nanquidno (Cornwall), 8th September. **Red-throated Pipit** *Anthus cervinus* Porthwarra, 8th September. **Citrine**



Hugh Harrop

289. Adult Red-rumped Swallow *Cecropis daurica*, Hoswick, Shetland, September 2006.



James Lees

290. Aquatic Warbler *Acrocephalus paludicola*, Slimbridge, Gloucestershire, August 2006.



Bob Flood

291. Paddyfield Warbler *Acrocephalus agricola*, St Mary's, Scilly, September 2006.

Hugh Harrop



292. Olive-tree Warbler *Hippolais olivetorum*, Boddam, Shetland, August 2006.

Wagtail *Motacilla citreola* Stiffkey Fen (Norfolk), 4th September; Fair Isle (Shetland), 5th–8th September; St Mary's, 6th September. Thrush Nightingale *Luscinia luscinia* Spurn (East Yorkshire), 18th and 21st August.

Zitting Cisticola *Cisticola juncidis* St Margaret's at Cliffe (Kent), 25th August. Aquatic Warbler *Acrocephalus paludicola* Sandwich Bay (Kent), 15th August; Seasalter (Kent), 17th–21st August; St Agnes, 18th August; Slimbridge, 18th–21st August; Radipole, 18th August; Titchfield Haven (Hampshire), 19th August; Marazion Marsh (Cornwall), 23rd August; Steart (Somerset), 25th August. Paddyfield Warbler *Acrocephalus agricola* Kilnsea (East Yorkshire), 13th August; St Mary's, 9th September. Booted Warbler *Hippolais caligata* Cunnigar, Dunganarvan (Co. Waterford), 26th–27th August; Tiree, 31st August to 2nd September. Olive-tree Warbler *Hippolais olivetorum* Boddam (Shetland), 16th August. Subalpine Warbler *Sylvia cantillans* St Agnes, 1st September; Bryher, 4th–10th September. Greenish Warbler *Phylloscopus trochiloides* Farne Islands (Northumber-

Paul Baxter



293. Greenish Warbler *Phylloscopus trochiloides*, Fair Isle, Shetland, August 2006.

land), 14th August, with two on 18th August; Hartlepool Headland, 18th–21st August; Fair Isle, 18th and 25th–27th August; Holy Island (Northumberland), two, 19th August, one to 21st August; Flamborough Head (East Yorkshire), 20th August; Findon (Northeast Scotland), 20th–21st August; Long Haven quarry (Northeast Scotland), 20th August; Whinnyfold (Northeast Scotland), 20th August; Start Point (Devon), 20th August; Kilnsea, 25th August; Brownstown Head (Co. Waterford), 3rd–5th September; Bryher, 5th September; Bressay (Shetland), 6th September. Arctic Warbler *Phylloscopus borealis* Fetlar (Shetland), 31st August; Foula (Shetland), 2nd September. Western Bonelli's Warbler *Phylloscopus bonelli* Hauxley (Northumberland), 29th August. Western/Eastern Bonelli's Warbler *Phylloscopus bonelli/orientalis* Tiree, 8th September.

Woodchat Shrike *Lanius senator* Fair Isle, 18th–20th August and 2nd–10th September; Langstone (Hampshire), 28th August; Portland, 29th–30th August; Walney Island (Cumbria), 4th September; St Mary's, 11th September; Sennen Cove (Cornwall), 11th September. Rose-coloured Starling *Sturnus roseus* Staddon Heights (Devon), 9th September; Ness of Sound (Shetland), 10th September. Yellow-breasted Bunting *Emberiza aureola* West Runton (Norfolk), 26th August.

Correction

The photograph of a male Red-backed Shrike *Lanius collurio* on page 504 of the September issue (plate 268) was incorrectly attributed to John Carter; the photographer was in fact Dave Stewart and we apologise for this error.



294. Greenish Warbler *Phylloscopus trochiloides*, Farne Islands, Northumberland, August 2006.

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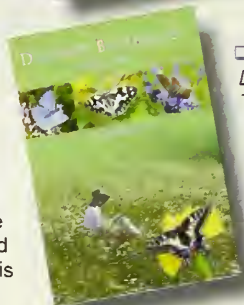
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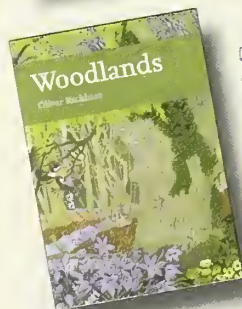
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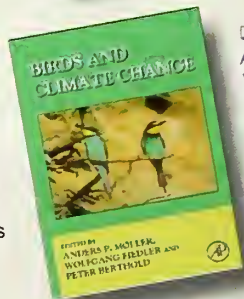
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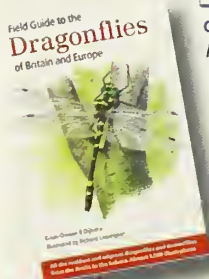
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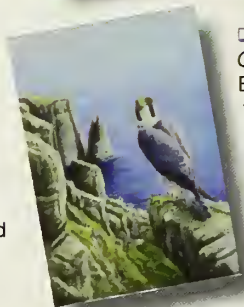
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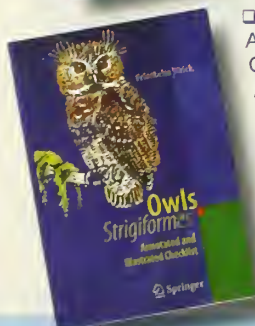
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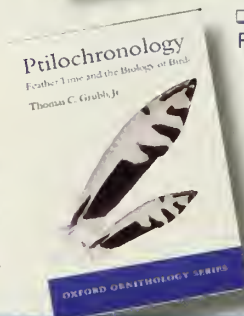
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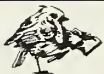
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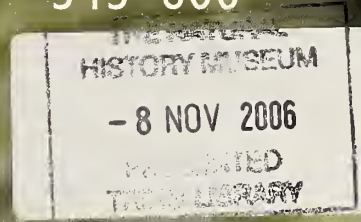
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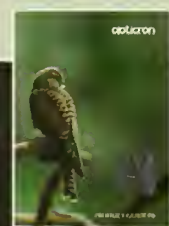
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Important Bird Areas of the United Arab Emirates

Simon Aspinall and Peter Hellyer

ABSTRACT This paper reviews the status of 20 Important Bird Areas in the United Arab Emirates which were first defined in the early 1990s.

Ornithologically, the country is notable for important populations of seabirds, waterbirds and a number of restricted-range landbird species. The IBA programme was an important step forward in drawing attention to key sites, but progress in safeguarding these core areas has been patchy. Given the speed of development in many parts of the UAE, the need to identify conservation priorities is now vital.

The United Arab Emirates, a country of around 90,000 km² that lies in the southern Arabian Gulf, is a federation of seven separate emirates that was established in 1971. It has been a popular destination for visiting ornithologists for many years, particularly in winter and spring, with species such as Grey Hypocolius *Hypocolius ampelinus*, Crab-plover *Dromas ardeola*, Hume's Wheatear *Oenanthe alboniger* and Plain Leaf Warbler *Phylloscopus neglectus*, among a great many others, proving a particular draw. All of these and many other migrants, including waterfowl, and a number of breeding species, are well known both within and beyond the UAE. What is less well known is the level of protection afforded to important resorts, whether they are, for example, seabird colonies, vital shorebird stopover sites or areas which are representative of a particular regional bird community.

In the early 1990s, BirdLife International was responsible for collating a review of Important Bird Areas (IBAs) for the Middle East (Evans 1994). Of 20 such sites identified in the UAE, no fewer than eight concerned Gulf islands (or clusters of islands and islets), while six others were coastal wetlands. Just one was a sand-desert site, while the remainder were a mixture of stony plain, mountain and native woodland sites. Twelve years on, this paper provides a

review of all of those sites selected as IBAs, with the emphasis on those of international conservation importance.

The importance of the Gulf's offshore islands for wildlife has been thoroughly documented in recent years, as indeed has that of intertidal flats along the Gulf coast for migrant shorebirds and other waterfowl (e.g. Evans 1994, Scott 1995, Aspinall 1996a,b, 2004). Few observers will have had the opportunity to visit any of the offshore islands, all but one of which lies in Abu Dhabi emirate, since access is mostly restricted. It is here in particular, however, that internationally important populations of several seabird species, as well as Crab-plover, Osprey *Pandion haliaetus* and Sooty Falcon *Falco concolor*, can be found breeding. Apart from birds, Dugong (Seacow) *Dugong dugon*, Green Turtle *Chelonia mydas* and Hawksbill Turtle *Eretmochelys imbricata* (which nests on the islands) are internationally recognised threatened species, and are widely distributed along with extensive coral reefs and seagrass beds. Hitherto, restricted access may have served to conserve some of these sites; this is no longer the case, however, and formal safeguards are now certainly necessary. A small number of sites have already been afforded protection.

Most sites selected for the review in Evans (1994), the 'wetland inventory' (Scott 1995) and

all subsequent related publications on important coastal wetland areas (e.g. Loughland *et al.* 2004) were those known to regularly hold 1% or more of the estimated Middle East breeding population or, for migrants, relevant flyway population of one or more species of waterfowl. These species are named in the following site accounts. It is now known that no fewer than 17 species of waterbird occur in regionally important numbers on passage and/or in winter at one or more sites; consequently, there is an obligation for site protection measures to be put in place, particularly within areas recognised as IBAs. Many sites support several such species simultaneously.

An interesting fact, perhaps not widely known, is that the breeding and non-breeding seasons for some local breeding species are effectively reversed in the UAE. For example, Red-billed Tropicbird *Phaethon aethereus*, Socotra Cormorant *Phalacrocorax nigrogularis*, Osprey and Caspian Tern *Hydroprogne caspia* breed in the winter months, which (in the case of the last two species) is when their populations are augmented by northern migrants. All other species named below breed in the summer months, even if egg-laying is often as early as February or March (e.g. Western Reef Egret *Egretta gularis* and Saunders's Tern *Sterna saundersi*), although annual variation in

the onset of breeding in the southern Gulf is often marked.

Since IBAs are the principal focus of this account, particularly those of international conservation importance, it is important to know the criteria on which sites were judged for inclusion (in Evans 1994). Those criteria relevant to the UAE are listed as follows, a site being considered an IBA when it:

1. regularly holds a significant number of a globally threatened species*;
- 2i. regularly holds 1% or more of a species' biogeographical, flyway or Middle Eastern population (waterbirds and seabirds only);
- 2ii. regularly holds 20,000 or more waterbirds;
3. regularly holds a significant number of a species which is threatened or declining within the Middle East (top five sites in country only);
4. regularly holds a significant number of a species wholly or largely restricted to the Middle East (top five sites in country only);
- 5i. is a representative example of a habitat, associated with a characteristic assemblage of bird species;
- 5ii. contains a rare/threatened/unique habitat, associated with a characteristic assemblage of bird species; and/or
6. is important for bird conservation through education/research/tourism.



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295. The UAE supports two breeding colonies of Crab-plover *Dromas ardeola*, the larger, with 300+ pairs, being on the island of Abu Al Abyadh (p. 556).

* A number of such species occur in the UAE on passage or in winter, although only Lesser Kestrel *Falco naumanni* occurs regularly in significant numbers. Socotra Cormorant is regionally threatened but restricted to the region and is arguably therefore also globally threatened (see Appendix 1).

Apart from important populations of waterfowl, whether breeding or visiting, and international Red Data and proposed national Red Data breeding species (see Appendix 1), one further group of birds requires consideration before each IBA site is described. This comprises those species of 'restricted range', each defined as having their population 'wholly or largely' restricted to the Middle East (see Evans 1994). Again, both breeding and visiting species are involved.

The restricted-range breeding species, excluding species of waterfowl that might otherwise qualify, but which can be readily assessed on the basis of so-called 1% levels, are as follows:

Sand Partridge *Ammoperdix heyi*, Striated Scops Owl *Otus brucei*, White-spectacled Bulbul *Pycnonotus xanthopygos*, Hooded Wheatear *Oe. monacha*, Hume's Wheatear, Arabian Babbler *Turdoides squamiceps* and Pale Rock Sparrow *Carpodacus brachydactyla*.

The relevant restricted-range visiting species are:

Grey Hypocolius, White-throated Robin *Irania gutturalis*, Red-tailed Wheatear *Oe. xanthopygus*, Variable Wheatear *Oe. picata*, Upcher's Warbler *Hippolais languida*, Ménétries's Warbler *Sylvia mystacea*, 'Desert Lesser Whitethroat' *S. curruca minula*, Hume's Lesser Whitethroat *S. althaea* and Plain Leaf Warbler.

Site accounts

For visiting ornithologists, all accessible mainland sites are described in Richardson & Aspinall 1998.

1. Al Jazirah Khor (area c. 500 ha; IBA criterion 2i)

A scenic, sheltered inlet in the emirate of Ra's al Khaimah, around 15 km long and lacking any degree of protection. A count of 745 Terek Sandpipers *Xenus cinereus* in September 1986 has not been matched subsequently and the true value of the area for this species and other waterfowl remains poorly known. Desert Lesser Whitethroat and Ménétries's Warbler are restricted-range species which occur regularly in wooded scrub along the dune front.

Al Jazirah Khor has been subject to dumping



296. In excess of 25,000 pairs of White-cheeked Tern *Sterna repressa* nest in the UAE, most being on islands in western Abu Dhabi.

and fly-tipping and, latterly, to reclamation and development. The prospects for this area seem remote, owing to development plans for continued expansion. Access along the landward shoreline is unrestricted where housing is not present.

2. Digdaga-Hamraniyah (area c. 2,000 ha; IBA criteria 1 & 4)

This area, spread over several tens of square kilometres, is composed of irrigated cultivations on the sand and gravel plain adjacent to the Hajar Mountains in Ra's al Khaimah. Native 'ghaf' trees *Prosopis cineraria* have been retained, thereby giving a parkland aspect.

The area is of importance, particularly in spring, for Lesser Kestrels as a stopover site. Over 100 individuals may occur together, with some turnover also evident. The globally threatened Sociable Lapwing *Vanellus gregarius* occurs in winter, when up to four birds have been recorded. Restricted-range species include nesting Striated Scops Owl and Arabian Babbler, and visiting Red-tailed and Variable Wheatears, Desert Lesser Whitethroat and Plain Leaf Warbler are all regular. Other species recorded include Spotted Eagle *Aquila clanga*, Yellow-throated Sparrow *Petronia xanthocollis* and Spanish Sparrow *Passer hispaniolensis* (both

nesting), and Arabia's only nesting Common Starlings *Sturnus vulgaris* and European Rollers *Coracias garrulus*.

The local area has suffered from water shortage, owing to excessive abstraction lowering the water table and inadequate recharge, and the fields have lain mostly fallow in recent years. Their attractiveness to most species named above has thus declined markedly. The area is unprotected. Visiting Hamraniyah itself, the core of the area, is permitted simply by asking for entry at the main gate (see Richardson & Aspinall 1998).

3. Siniyah Island (area 1,000+ ha; IBA criteria 2i & 4)

This island in the emirate of Umm Al Qaiwain lies close inshore and is adjacent to Khor al-Beidah (site 5). It is famed for its nesting colony of Socotra Cormorants, with estimates of up to 40,000 pairs present into the early 1990s, although less than half this population has been present since. Many Mountain Gazelles *Gazella gazella* and other species of ungulate have been introduced and appear to be thriving.

The island is in private ownership and unprotected. Disturbance and development, although not persecution of the cormorants (as elsewhere in the UAE), seem to be the principal



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297. Around 40 pairs of Collared Kingfisher *Todiramphus chloris* of the endemic subspecies *kalbaensis* breed at Khor Kalba (p. 553), where there are real concerns over the long-term future of the mangrove habitat on which they depend.

Hanne & Jens Eriksen



Simon Aspindl



298 & 299. Socotra Cormorant *Phalacrocorax nigrogularis*, a near-endemic of Arabia, is regionally, if not thus globally, threatened. Plate 299 shows the Socotra Cormorant colony on Ghaghah, IBA No. 14, in March 1993.

threats. Visiting may be possible to members of bona fide organisations, but is unlikely to be extended to casual visitors. The cormorant colony can be viewed by boat, which may be hired at most local hotels.

4. Masafi-Tayibah area (area c. 2,000 ha; IBA criteria 4 & 5i)

This area of foothills on the western flank of the Hajar Mountains in Ra's al Khaimah has plains with *Acacia tortilis* savannah woodland and wooded wadis (valleys).

A large number of restricted-range species

occur, in a combination not matched by any other single site in the UAE, and many of them are present at high density. Breeding species include Sand Partridge, White-spectacled Bulbul, Hume's Wheatear and Arabian Babbler; visitors include Red-tailed and Variable Wheatears, Upcher's and Ménétries's Warblers, Desert Lesser Whitethroat, Plain Leaf Warbler and Pale Rock Sparrow (which may also breed).

Threats include limited housing development, over-grazing, fly-tipping and the collection of firewood. Although the area is unprotected, it is not considered to be under imminent threat. Access is unrestricted.

5. Khor al-Beidah (area c. 5,000 ha; IBA criterion 2i)

This extensive area of sheltered intertidal flats backed by vegetated sand dunes, with mangroves *Avicennia marina* on the seaward side, holds an overwintering flock of Crab-plovers, and for this reason is one of the most frequently visited of the UAE's IBAs by birdwatchers. At least four other waterbirds occur in significant numbers on passage or in winter, namely Western Reef

Egret (also breeding), Lesser Sand Plover *Charadrius mongolus*, Great Knot *Calidris tenuirostris* and Eurasian Curlew *Numenius arquata*. Both Saunders's Tern and White-cheeked Tern *Sterna repressa* breed on the island of Ghubbah, which is included in the site boundary.

The area is unprotected; access is unrestricted but naturally difficult over much of the area, which therefore remains remote. Fears for the long-term future of this currently undeveloped area will be allayed only when the site, or at least part of it, has been formally designated.



Hanne & Jens Eriksen

300. Up to 40 pairs of Sooty Falcon *Falco concolor* formerly bred annually on the UAE's Gulf islands, but the species now faces a high risk of extinction in the country.

This, however, may be some way in the future, and plans have already been announced for a major residential and marina development in one of the most important parts of the khor.

**6. Ramtha lagoons (area c. 250 ha;
IBA criteria 4, 5i & 6)**

Now renamed the Wasit Nature Reserve, this former coastal inlet has been overtaken by reclamation and development since its heyday as a wetland in the late 1980s and early 1990s. It was made all the more attractive to birds at that time by on-site sewage disposal.

The area formerly held upwards of 50 pairs of Black-winged Stilt *Himantopus himantopus*, two or three pairs of White-tailed Lapwing *Vanellus leucurus* (this was the first nesting site in UAE for this species), a flock of non-breeding Greater Flamingos *Phoenicopterus roseus* and important post-breeding assemblages of Saunders's Tern and Common Tern *Sterna hirundo*. Large numbers of marsh terns *Chlidonias* occur on passage, as do Spotted Eagles and, rarely, Eastern Imperial Eagles *Aquila heliaca*.

Although progressively declining in importance to birds over the last few years, Ramtha is now in the process of being restored, albeit with

slightly reduced boundaries, and over 50 pairs of Black-winged Stilt bred once more in 2006. The Sharjah Government is currently developing and rehabilitating the site as a nature reserve, and a visitor centre, hides and perhaps boardwalks are to be installed in due course. Visiting details are not yet available.

**7. Mushrif National Park (area 600 ha;
IBA criteria 4, 5i & 6)**

This fenced-off area of managed native woodland amid dunes in Dubai emirate excludes livestock and holds high-density populations of several restricted-range species typical of this particular habitat type: Striated Scops Owl and Arabian Babbler (several pairs of both breed); Ménétries's Warbler and Desert Lesser Whitethroat on passage and in winter; and Upcher's Warbler and White-throated Robin on passage. Several pairs of Yellow-throated Sparrow breed. Much of the area is landscaped, with leisure amenities and a playground, and is essentially set up for family picnicking.

Access within this small park, which has a road network, is unlimited. A nominal charge is levied for entry. Although by no means a national park in the accepted sense, this wooded parkland is clearly of value as a representative

example of its type, quite apart from having value for education and recreation.

8. Zabeel ponds (area 50 ha; IBA criterion 6)

This entirely man-made site constitutes four freshwater ponds used for fish-farming. The site lies adjacent to Khor Dubai (site 9), adding to the intrinsic attraction of both sites.

Spotted Eagles, and occasionally Eastern Imperial Eagles, occur in the area from late October onwards. Ferruginous Duck *Aythya nyroca* often appears in winter, with up to five individuals present. Reintroduced Mountain Gazelles are found in the neighbouring sand sheet and scrub, but remain isolated from other populations by major roads and interchanges.

The area is little disturbed and access to the general public is *not* now permitted. Please do not try to visit, announced or otherwise. The original criterion by which this site was accepted is no longer valid, but in any event criterion 3 is fulfilled (together, and as with the following site).

9. Khor Dubai (area c. 300 ha; IBA criteria 2i, 2ii, 5i & 6)

The landward end of Khor Dubai, a narrow tidal inlet, contains c. 50 ha of mudflats, part with maturing mangrove plantation, and sabkha (saltflats). Downstream lies the city of

Dubai, where the khor (intertidal inlet) has been dredged for vessels at the busy commercial wharfside.

At least nine species of waterbirds occur in numbers that exceed their respective 1% regional or flyway population estimate in winter, including Grey Heron *Ardea cinerea*, Ringed Plover *Charadrius hiaticula*, Kentish Plover *C. alexandrinus*, Lesser Sand Plover, Greater Sand Plover *C. leschenaultii*, Grey Plover *Pluvialis squatarola*, Common Redshank *Tringa totanus* and Black-headed Gull *Larus ridibundus*. Over 4,000 Broad-billed Sandpipers *Limicola falcinellus* were recorded on one occasion in autumn (Uttley *et al.* 1988), but numbers have rarely exceeded 500 since, at any time of year. A reduction in fertility, or rather of nutrient input, since the development of a purpose-built water and sewage treatment plant, may be responsible for the high numbers of birds, although the site was and continues to be in danger of becoming so eutrophic that it becomes anoxic. Spotted Eagle is regular, with 5–10 individuals present in recent winters.

The Ra's al-Khor reserve at Khor Dubai has been protected since 1985, when a decree was first issued. Management of the area has been questionable, seemingly inappropriate at times. Three hides have now been built and are open throughout the day to anyone (binoculars and



Colin Richardson

301. Khor Dubai is an internationally renowned site for passage and non-breeding waterbirds; managing the potential conflicts between the demands of wildlife and development will be the key to the future of this site.



Hanne & Jens Eriksen

302. Up to 150 breeding pairs of Red-billed Tropicbird *Phaethon aethereus indicus* are found in the UAE, the colonies on just three offshore islands representing the entire Gulf population.

telescopes are provided), although, frustratingly, are closed after normal working hours and at weekends. The reserve was established primarily in an effort to encourage flamingos to breed, with supplementary artificial feeding taking place in bunded lagoons. Attempts are also under way to encourage Ospreys to nest. Khor Dubai continues to be one of the country's top five wetlands for passage and wintering waterfowl, although it remains to be seen whether several huge developments under way around the khor, specifically at the landward end, will have a negative impact on the reserve, despite all the safeguards in place.

**10. Khor Kalba (area 600 ha;
IBA criteria 3, 5ii & 6)**

Khor Kalba, on the east (Indian Ocean) coast of the UAE, is an outlying part of Sharjah emirate, with the extreme southern part of the site, of saline flats without mangrove, crossing into Oman. It is the only intertidal site of its kind on the UAE's Gulf of Oman coast with large, mature mangroves; two similar sites exist to the south in Oman, namely Khor Shinas and Khor Liwa (included in Oman's IBAs in Evans 1994).

About 40 pairs of the endemic *kalbaensis* subspecies of Collared Kingfisher *Todiramphus*

chloris breed (in hollow boughs of mature mangroves); this site is the type locality. One or two pairs may breed in Khor Shinas or Khor Liwa and in one other site in Oman. Khor Kalba is one of just two breeding stations for Sykes's Warbler *Hippolais rama* in Arabia. Indian Pond Heron *Ardeola grayii* occurs in winter, and this is its main station in the UAE. Green and Hawksbill Turtles feed both in the khor and along the open coast.

Despite representation by international non-governmental organisations, including BirdLife International, UNESCO and WWF International, and by Sharjah's Environment and Protected Areas Authority (EPAA), little advice appears to have been heeded and the Khor Kalba area is currently being heavily developed. Severe damage has already been caused; for example, a 300-m strip of mangrove alongside a creek died after all tidal influence was cut off by road-building. Dredging and stockpiling has had adverse impacts in other areas of mature mangrove, including trees used for nesting by Collared Kingfisher. There are grave fears for the future of this site, even in the short term, although the Ruler of Sharjah is, somewhat belatedly, understood to be considering remediation measures in an attempt to reverse the

Simon Aspinall



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303 & 304. The UAE supports up to 24,500 breeding pairs of Lesser Crested Tern *Sterna bengalensis* in just three colonies, the largest of which is on Qarnein. This island also supports the only colony of Crested Tern *S. bergii* in UAE, and over 10,000 pairs of Bridled Tern *Onychoprion anaethetus*, making it arguably the most important of all the Gulf islands for seabirds.

site's current decline.

Visiting is freely permitted, although flooded excavations and workings may prevent access to all areas previously reachable.

11. Qarn Nazwa (area c. 250 ha; IBA criteria 4 & 5ii)

This small, 2–3-km long, isolated limestone jebel (mountain), which rises 80 m above the surrounding desert, supports one, sometimes two, pairs of breeding Desert Eagle Owls *Bubo ascalaphus*, and Arabian Babblers, and is fre-

quented in winter by Red-tailed and Variable Wheatears, Desert Lesser and Hume's Lesser Whitethroats (rarely) and Plain Leaf Warbler. Pale Rock Sparrow is frequent on passage, as is Upcher's Warbler.

Gordon's Wildcat *Felis sylvestris gordonii* (endemic to UAE and northern Oman) occurs, as occasionally does a visiting Mountain Gazelle. Muscat Mouse-tailed Bats *Rhinopoma muscatellum* roost in large numbers in caves on the jebel.

The entire jebel has now been fenced off, although for what reason(s) is unclear. It is possibly a conservation initiative by the relevant government authority. Visiting is still possible, although not upslope onto the jebel itself now that the high fence is in place. Nonetheless, all species named can still be found on foot around the site's perimeter.

12. Qarnein island (area c. 300 ha; IBA criteria 2i, 4 & 5ii)

The jewel in the crown of the Gulf islands is undoubtedly the island of Qarnein, despite being only 2 km long by less than 1 km wide. It

lies 180 km northwest of Abu Dhabi city, nearly 100 km out into the Gulf. One of several salt-dome islands in the Gulf, it has three diapiric hills (despite the literal translation of Qarnein being 'two horns'), in recesses on which nest, in winter, 80–100+ pairs of Red-billed Tropicbird. In summer, over 10,000 pairs of both Lesser Crested *Sterna bengalensis* and Bridled Terns *Onychoprion anaethetus* can be found, over 1,000 pairs of both Crested *S. bergii* (the UAE's only colony) and White-cheeked Terns, and 100–200 pairs of Sooty Gull *Larus hemprichii*,

the larger of just two remaining Gulf colonies. The colonies of Crested and Lesser Crested Terns represent over 5% and 10% of their respective biogeographical populations. Hawks-bill Turtles nest in small numbers.

Qarnein supports the largest of the three remaining Gulf colonies of tropicbirds, the other two colonies also being on Abu Dhabi islands; a few pairs are also found on the Omani islands off the Musandam in the Straits of Hormuz. Qarnein itself was confirmed as a 'Gift to the Earth' under a WWF initiative in February 2003. The island is privately owned and access is not permitted to the general public; conservation of its wildlife, including both nesting birds and nesting turtles, is the responsibility of the Environment Agency – Abu Dhabi (EAD).

13. Dalma island (area c. 500 ha; IBA criterion 3)

This large island lies 50 km offshore in western Abu Dhabi and houses an important fishing fleet. The island itself is an upraised part of a salt dome, with low fossil cliffs around part of the island coastline. The interior of the island is hilly and arid, although cultivation takes place in the flat southern part.

Five pairs of Sooty Falcon once nested on

Dalma, but there are fears that none now remain. A fresh survey is clearly required. Nest thefts, earthmoving and disturbance are all threats here, with large-scale developments also now being planned. There is no site protection, and while domestic environmental legislation outlaws egg-collecting and chick theft, there is no enforcement.

It is possible to visit Dalma, but an overnight stay would be necessary to see the island properly as the ferry arrives late in the day and leaves either immediately or before dawn the next day. There is an indifferent hotel, but self-contained camping would be an option.

14. Ghaghah islands (area 800 ha; IBA criteria 2 & 4)

The Ghaghah archipelago lies close inshore in the extreme west of Abu Dhabi, on the border with Saudi Arabia. Formerly uninhabited, the islands are now partly developed, with mostly unknown consequences to the wildlife. The Socotra Cormorant colony remains, but eight pairs of Sooty Falcon, found during a survey in summer 1994 after the site was submitted as an IBA, are at risk, if still present. Certainly a pair from one of the smaller islands has been displaced in recent years. Up to seven pairs of Osprey breed and although relatively tolerant of



305. The Masafi area (p. 550), shown here in 1998, supports a large number of restricted-range species, among them breeding Sand Partridge *Ammoperdix heyi*, White-spectacled Bulbul *Pycnonotus xanthopygos*, Hume's Wheatear *Oenanthe alboniger* and Arabian Babbler *Turdoides squamiceps*.

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disturbance and not persecuted, even this species may be usurped by ongoing development here.

The Ghaghah islands lack any form of protection and, being of strategic value, are unlikely to be managed sympathetically for wildlife. Visiting is probably not possible to members of the general public.

15. Islands off Sir Bani Yas (area 190 ha; IBA criteria 2i & 4)

The small, formerly, and possibly still uninhabited islands of Ghasha, Umm Al Kirkum and Umm Qasser lie to the northeast of Sir Bani Yas island, in western Abu Dhabi. Important seabird colonies are found here, with Bridled Tern the most numerous of three nesting tern species, White-cheeked and Lesser Crested Tern being the others. Saunders's Tern may also breed, as may Socotra Cormorant. As with Dalma and Ghaghah (sites 13 & 14), fresh surveys and appropriate action are required here. There are no known arrangements for visiting any of these islands.

16. Yasat islands (area c. 2,000 ha; IBA criteria 2i & 4)

The islands of the Yasat group lie 35 km offshore in western Abu Dhabi. Formerly uninhabited except for a coastguard base at the time

the islands were first recognised as an IBA, this is no longer the case. A harbour and an airstrip have been built, along with residential properties. No environmental impact study was completed in advance of the rapid development witnessed in this environmentally sensitive area. Dredging work is presently underway, even though the islands fall within a recently designated Marine Protected Area (MPA). In 1994, up to 17 pairs of Osprey were present, as was a sizeable colony of Socotra Cormorant. An unknown number of White-cheeked Tern and 20–30 pairs of Saunders's Tern breed. Recent surveys by EAD have detected a decline in the breeding populations of terns and Osprey, while the Socotra Cormorant colony, which once supported over 2,000 pairs, has probably now been lost.

The Yasats are the core of the second MPA to be designated in Abu Dhabi emirate, and are managed by EAD. The MPA was established primarily to conserve communities offshore, notably seagrass beds and coral reefs.

There are no arrangements for visiting the islands, which are in private ownership.

17. Abu Al Abyadh island (area c. 60,000 ha; IBA criteria 2i & 4)

Abu Al Abyadh is famous for its breeding colony of Crab-plovers. Something of a Middle



306. Saunders's Tern *Sternula saundersi*. Many nesting sites are threatened by or have been lost to coastal development.

Eastern speciality, at least during the breeding season, this species has exacting nesting requirements and is extremely vulnerable to development and disturbance. The colony bank and adjacent mangrove-lined khor on Abu Al Abyadh is now protected, although tidal erosion has apparently resulted in the colony being split. Brown Rats *Rattus norvegicus*, absent from the original colony, have arrived in the newer nesting location and control measures need to be put in place.

Apart from 300+ pairs of Crab-plover, the island supports important populations of at least three other waterfowl, namely Western Reef Egret (resident), Lesser Sand Plover and Great Knot, while up to 50 pairs of Saunders's Tern breed.

Visiting is generally not possible, except perhaps to bona fide researchers.

**18. Umm Amim (area c. 50 ha;
IBA criteria 2i & 4)**

This small, low, shell-sand shoal supports the second breeding colony of Crab-plovers found in Abu Dhabi (and the UAE), although at c. 35–40 pairs it is substantially smaller than the Abu Al Abyadh colony. Up to 2,000 pairs of Bridled Tern nested here in 1993 and 1994,

although collection of their eggs for human consumption may have caused some desertion. Seasonal wardens were subsequently placed here to protect the breeding birds.

The island is occasionally visited by residents of the coastal town of Mirfa. Disturbance and any egg-collecting could easily result in the Crab-plovers deserting, although the island does lie within the Marawah MPA, as described later. The importance of Marawah itself, a neighbouring island of Umm Amim, was determined only after the initial IBA review was completed.

**19. Jebel Hafit (area c. 1,600 ha;
IBA criteria 3 & 4)**

Jebel Hafit, lying just to the south of the inland oasis city of Al Ain, in Abu Dhabi emirate, rises abruptly from the desert plain to an altitude of 1,300 m. It is a predominantly limestone massif and a familiar landmark. This is the only mountain in Abu Dhabi emirate and, moreover, the only IBA in the UAE to contain such a landscape feature.

Jebel Hafit supports four restricted-range breeding species, namely Sand Partridge, White-spectacled Bulbul, Hooded Wheatear and Hume's Wheatear, and, in winter, Red-



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307. The islands of the Yasat group, virtually uninhabited when first recognised as an IBA, as this photograph taken in 1993 suggests, are now subject to development. Recent surveys indicate that populations of White-cheeked Tern *Sterna repressa* and Saunders's Tern *Sternula saundersi* have declined, while a Socotra Cormorant *Phalacrocorax nigrogularis* colony that once topped 2,000 pairs has been lost, despite the archipelago lying within a marine protected area.

tailed Wheatear, Desert Lesser Whitethroat and Plain Leaf Warbler are all numerous. The only regular gathering of Egyptian Vulture *Neophron percnopterus* in UAE is found here, the species having declined greatly in numbers in the last decade. Bonelli's Eagle *Aquila fasciata* and Barbary Falcon *Falco peregrinoides*, proposed national Red Data species, both breed on the jebel. Also present is the Arabian Tahr *Hemitragus jayakari*, a goat-like ungulate endemic to UAE and northern Oman and highly endangered (IUCN Red-listed).

Access to the mountain is unrestricted, except around a private residence near the summit. A major highway leads to the top, where there is now a hotel. Although not pristine, Jebel Hafit has been nominated for national-park status, something which would unquestionably be a real boon to the conservation of several of the threatened species present. One part of the foot of the mountain has been sacrificed to irrigation and greening for a tourist development.

20. Baynunah (area 180,000 ha; IBA criteria 1, 4, 5i & 6)

Baynunah in western Abu Dhabi is a large area of shrubby desert used for military training and

for hunting, as well as for camel grazing. The topography is relatively varied with gravel plains, sabkha saltflats, sand dunes and rocky mesas all present.

Macqueen's Bustard *Chlamydotis macqueenii* is found in winter, something which has inevitably served to safeguard the area from much in the way of intrusion or development. Populations of some other species are impressive, even though the area is large, with mid-winter estimates of 7,000 Hoopoe Larks *Alaemon alaudipes*, 2,000 Lesser Short-toed Larks *Calandrella rufescens*, 15,000 Desert Wheatears *Oe. deserti* and 12,000 Asian Desert Warblers *Sylvia nana* (Evans 1994). Many of the onshore (desert) oilfields also support these species at high densities, which is a testimony to the high environmental standards and operational procedures adopted by the national oil company.

Off-road driving, which damages the vegetation, and overgrazing are serious threats. The Baynunah area is unprotected, and apart from traditional grazing its use is reserved for private falconry parties. It is possible to visit and camp out here, although this is not permitted near the border, and certainly ill-advised when military training is underway.



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308 & 309. Mushrif National Park (p. 551) in 1998; this small and heavily visited native woodland amid dunes in Dubai supports a number of restricted-range species, including White-throated Robin *Irania gutturalis* on passage (plate 309).

Concluding comments

Shortly after the initial IBA review process was completed, researchers from the Environmental Research and Wildlife Development Agency of Abu Dhabi (ERWDA), now EAD, completed a midsummer survey of all islands in western Abu Dhabi and identified a minimum of six additional sites which would have qualified as 'Important Bird Areas'. These 'new' sites and extensions to others offshore and on the mainland were incorporated in the wetland inventory (Scott 1995), which documented sites of 'Ramsar' calibre, and more recently in a comprehensive review of all marine areas including coastal wetlands in Abu Dhabi alone (Aspinall 2004). Many of these sites are, inevitably, also important for wildlife other than birds.

There is no Federal protected-area system in the UAE. Of the seven emirates, only Abu Dhabi, Sharjah and, most recently, Ra's al Khaimah have autonomous, officially designated environmental-protection agencies, these being engaged in resisting the hunger of land developers (with varying degrees of success).

All reserves designated to date have been established by ruling decree at an individual emirate level. It is sobering to realise that of the islands supporting internationally important seabird colonies described here, only Qarnein and Umm Amim are officially protected, the latter falling within the Marawah MPA. Not so fortunate have been Dalma and the island groups of Ghaghah and Yasat, and off Sir Bani Yas, all of which have suffered recent serious environmental degradation, such is the demand from seemingly conflicting land uses, albeit not actually always incompatible. Three Socotra Cormorant colonies are certainly under threat as a result, this species having been lost from Dalma up to 30 years ago, while important tern colonies are also likely to suffer in this particular instance.

The EAD-managed Marawah MPA itself, of some 4,250 km², established in 2002, supports

internationally important shorebird feeding areas (no fewer than 12 waders exceed their regional 1% level) and several internationally important tern colonies, but was established primarily on account of its Dugong and turtle populations. The prospects for other islands and also for intertidal areas of international importance, in particular for shorebirds, are uncertain. It should be noted that while some monitoring of breeding seabirds is already carried out by EAD in Abu Dhabi (in a minority of sites), effective protection of most key seabird and shorebird sites has still not been achieved.

The other IBAs of the UAE are mostly of national importance for birds and other wildlife, even if they represent the best examples of their kind. They too, however, do not look to be secure at the present time, nor do they contain viable populations of all proposed national Red Data species.



310. Brown-necked Ravens *Corvus ruficollis* over high dunes of the Empty Quarter; this species appears to be in sharp decline in the UAE and is poorly represented in existing IBAs.

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The IBA programme has served its initial purpose, to identify and highlight important sites for birds; but only faltering progress has been made with safeguarding any of them in the past ten years. A review process, probably emirate by emirate, of IBAs and other sites identified more recently, now needs to be undertaken to rationalise existing protected-area plans and identify priorities. Given the speed of development, especially along the coast, where tower blocks, marinas and new islands are being constructed with scant regard to environmental consequences, some urgency is required.

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Appendix 1. Proposed National Red Data species

The, as yet unofficial, UAE national 'Red Data' list for *breeding* species, as listed below with categories, was derived following recognised IUCN guidelines (IUCN 1994), but otherwise customised to provide a national context (Hornby & Aspinall 1997). Accompanying population estimates are based mostly on 1994–2001 survey data (Aspinall 2005), the list having been last updated in 2002.

Regionally threatened

Species facing a high risk of extinction nationally

Socotra Cormorant *Phalacrocorax nigrogrularis* (total of c. 40,000 pairs in eight colonies)

Sooty Falcon *Falco concolor* (up to 40 pairs)

Small world range

Species whose breeding range is confined to Arabia or to the coasts of the northwest Indian Ocean

Red-billed Tropicbird *Phaethon aethereus indicus* (total of 110–150 pairs in three colonies)

Crab-plover *Dromas ardeola* (total of 350–400 pairs in two colonies)

Sooty Gull *Larus hemprichii* (total of 250–500 pairs in two, possibly three, colonies)

Saunders's Tern *Sternula saundersi* (300–500 pairs, only semi-colonial)

Collared Kingfisher *Todiramphus chloris kalbaensis* (c. 40 pairs; subspecies endemic)

Threatened in the Middle East and/or the UAE

Species which are vulnerable because of their dependence on a small number of sites, or on a habitat type known to be naturally or otherwise threatened

Egyptian Vulture *Neophron percnopterus* (none breeding)

Golden Eagle *Aquila chrysaetos* (3 pairs; none in IBAs)

Osprey *Pandion haliaetus* (up to 75 pairs)

Barbary Falcon *Falco peregrinoides* (5–10 pairs)

Crested Tern *Sterna bergii* (800–1,200 pairs in a single colony)

Lesser Crested Tern *Sterna bengalensis* (total of up to 24,500 pairs in three colonies)

White-cheeked Tern *S. repressa* (total in excess of 25,000+ pairs; over ten colonies)

Bridled Tern *Onychoprion anaethetus* (total of up to 45,000 pairs; over ten colonies)

Regionally important breeding population

Western Reef Egret *Egretta gularis* (500–1,000 pairs)

Rare UAE breeder (excluding recent colonists)

Vulnerable species having a UAE breeding population of under 100 pairs, if not already listed.

Greater Flamingo *Phoenicopterus roseus* (<100 pairs; intermittent breeding attempts)

Short-toed Eagle *Circaetus gallicus* (1–2 pairs)

Bonelli's Eagle *Aquila fasciata* (5–10 pairs)

Caspian Tern *Hydroprogne caspia* (1–3 pairs)

Barn Owl *Tyto alba* (10–20+ pairs)

Desert Eagle Owl *Bubo ascalaphus* (20–35+ pairs)

Bar-tailed Desert Lark *Ammomanes cinctura* (<10 pairs)

Lesser Short-toed Lark *Calandrella rufescens* (total of 20+ pairs in two sites)

Sykes's Warbler *Hippolais rama* (5–15 pairs in a single site)

Species of special concern (deemed at risk nationally)

Cream-coloured Courser *Cursorius cursor* (50–100+ pairs)

Chestnut-bellied Sandgrouse *Pterocles exustus* (500–1,000 pairs; declining)

Brown-necked Raven *Corvus ruficollis* (<500 pairs; declining)

Request

BB on DVD

As we reported last year (*Brit. Birds* 98: 563), as part of plans to mark our 100th volume we hope to produce a DVD containing all the editorial from the last 100 years. We have looked at various possibilities, and we believe that the most exciting option is to produce a DVD featuring a series of pdfs of the original pages; these would be fully searchable by species, author, keyword, etc., as well as being available chronologically, and we think that it would be an excellent way of making *BB*'s fantastic archive of material much more widely available. We would have to work with a partner organisation to produce such a DVD, and have had preliminary discussions with BirdGuides, who have experience in this field through the production of *BWPi*. The sale price of the DVD is as yet undetermined since the full production costs are still unknown.

Having explored the technical side of things, we are left with one

significant hurdle to overcome before we decide whether or not to go ahead with the project. This is the issue of copyright. The copyright of all photographs and illustrations in *BB* remains with the photographer and illustrator respectively and, unless a waiver has been signed, authors retain copyright of their articles. This would be stated clearly and unequivocally on the disk. The product that we envisage would reproduce text, photos and illustrations exactly as they appeared in the original; it would not, therefore, be a 'new' use of the material. However, the format would be new, and as a result we would still have to treat the issue of copyright extremely carefully. If we have to reimburse contributors a second time for the publication of their material in this new format, the project simply will not happen. Our main objective is to produce the DVD as a valuable resource,

rather than for commercial gain, but clearly we cannot risk significant financial liabilities.

We have consulted around 100 regular contributors to *BB*, but now wish to seek wider opinion. For the project to happen, we need photographers, artists and authors to agree to the reproduction of their material in *this format only* without payment of royalties. If you have contributed to *BB*, we would like to hear your views, supportive or otherwise. Please contact us at adrianpitches@blueyonder.co.uk or by post at the Editorial Office.

If we decide to go ahead with this project, we shall need a complete set of unbound *BB*s for reference and scanning. We are currently missing the years 1907–49 and 1957–63 inclusive. Can anyone help? We would be willing to pay for these volumes. Please contact us, as above.

Eds

Patterns of nest attendance by a pair of Parrot Crossbills

Ron W. Summers

ABSTRACT A Parrot Crossbill *Loxia pytyopsittacus* nest at Abernethy Forest, Highland, was video-recorded from the laying of the first egg to fledging, allowing a detailed description of nest attendance by the parents. The four eggs were laid over a period of four days, hatched over three days, and the four chicks fledged over a period of just seconds. The female incubated the eggs alone, and her attendance at the nest increased as the clutch was laid. On average, she left the nest 2–6 times per day for an average total of 11.5 minutes per day during incubation. She spent each night incubating and then brooding the young until they were 8–10 days old. By day, the amount of brooding of the chicks declined steadily and no longer took place by the time the chicks were 7–9 days old. During the laying and incubation periods, the male visited the incubating female 7.1 times per day on average to feed her. The visit rate increased to a peak of 15 per day after the chicks hatched, but declined during the chick-rearing period, over which time the female made a greater contribution to feeding the chicks. Visits by the parents were synchronised, perhaps to minimise advertising the nest to predators. In total, the female spent 534 hours at the nest (328 during incubation and 206 during brood rearing). The corresponding figures for the male were 1.0 hour during incubation (99 visits) and 4.1 hours during brood rearing (268 visits).

The breeding biology of crossbills *Loxia* has been well documented and reviewed (e.g. Witherby *et al.* 1943, Bailey *et al.* 1953, Newton 1972, Nethersole-Thompson 1975, Cramp & Perrins 1994), so that the basic facts about the timing of nesting and laying, feeding of the incubating female by the male and care of the young are well known. There have also been periods of observation devoted to timing the frequency of visits to the nest by the adult birds. For example, observations of breeding Common Crossbills *L. curvirostra* in Colorado (Bailey *et al.* 1953), Parrot Crossbills *L. pytyopsittacus* in Scandinavia (Olsson 1964) and Scottish Crossbills *L. scotica* in native pinewoods in Scotland (Nethersole-Thompson 1975) were gathered during nest watches, providing information on the rates of feeding of

the female by the male and the feeding rates of the chicks by both parents. Such observations were, of course, limited because of the tremendous effort required to maintain continuous surveillance of the nest but, collectively, helped to provide a composite picture of nesting behaviour (Cramp & Perrins 1994).

What have not been recorded before are detailed observations over a whole nesting period, describing how the male and female change day- and night-time activities as incubation progresses and as the chicks grow. Such observations are now possible and have allowed ornithologists to gain a much greater insight into the behaviour of birds, and describe the parental investment into rearing young more precisely.

This paper describes the pattern of nest

attendance by a pair of Parrot Crossbills from laying to fledging using a video camera. In particular, it describes incubation scheduling by the female, timing of visits in relation to sunrise and sunset, feeding rate by the male when the female is incubating and brooding, and the feeding rate of both parents when the chicks are older.

Methods

The observations were made between 28th March and 2nd May 2002 at a Parrot Crossbill nest in a Scots Pine *Pinus sylvestris* in the ancient native pinewood of Abernethy Forest, Highland. The nest was in the crown of a 16-m tree at a height of 13.3 m. The pair was identified from sonograms of their calls (Summers *et al.* 2002).

The lens of the camera was 5 mm in diameter and attached to a short pole, allowing it to be tied to a small branch and positioned 30 cm from the nest. A cable ran from the lens down to a video-recorder at the foot of a nearby tree. The camera was powered by a 12-volt battery and set to take photographs at a rate of five per second, so that 24 hours of data could be compressed into a three-hour videotape. Daily visits were required to change the tape and battery. Six infrared-emitting diodes surrounded the lens, illuminating the nest at night. Further technical details are given by Perkins *et al.* (2005). Crossbills are tolerant of human intruders and the incubating female remained on the nest when visits were made to change the battery and tape. There was a single malfunction with the equipment, during 13th–14th

April, leading to the loss of about 24 hours of data.

Times refer to local time and are given in the form hours:minutes.

Results

Egg-laying and incubation

The camera lens was installed at the nest in the early afternoon of 28th March, when there was one egg in the nest. The remaining three eggs of the clutch were laid daily on the following days, so it is likely that the first egg had been laid on 28th March (table 1). The time of laying of eggs 2–4 was determined only when the female left the nest and the eggs were visible, so is given as a range – the time between the clutch having *n* eggs and then *n*+1 eggs. Nevertheless, it was clear that eggs were laid in the morning.

Nest attendance by the female covered most of the day during the laying period (days 2–4), but it was slightly less than that after the clutch was laid (fig. 1). On day 1, for which there were data from only 12:52 hrs, the female spent 64% of the day and all of the night on the nest. On days 2, 3 and 4, nest

Table 1. The main events during filming of a Parrot Crossbill *Loxia pytyopsittacus* nest at Abernethy Forest, Highland, 2002.

Event	Date	Time (hours:minutes:seconds)
Camera installed	28th March	12:26
Second egg laid	29th March	05:45–09:09
Third egg laid	30th March	08:04–09:04
Fourth egg laid	31st March	05:45–11:43
First egg hatched	11th April	13:30
Second egg hatched	12th April	04:48
Third egg hatched	12th April	09:19
Fourth egg hatched	13th April	12:21
First two chicks fledged	2nd May	05:02:52
Last two chicks fledged	2nd May	05:02:55
Camera removed	3rd May	15:40

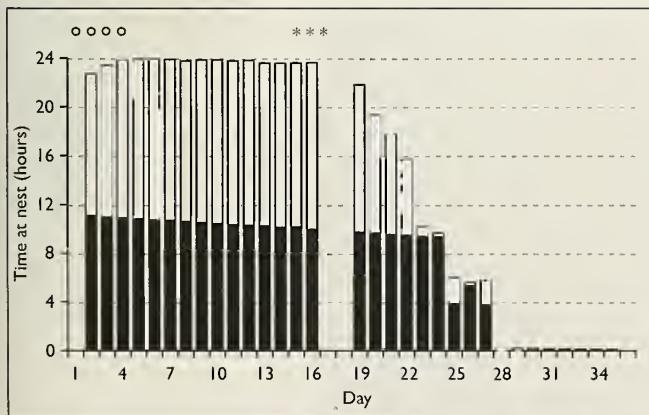


Fig. 1. Total time spent at the nest by the female Parrot Crossbill *Loxia pytyopsittacus* throughout the nesting period, Abernethy Forest, Highland, 2002. Day 1 = 28th March. The black section of each bar signifies the time spent at the nest between sunset and sunrise (declining through the nesting period), while the white section represents daytime presence. The laying period is denoted by oooo (days 1–4) and the hatching period by *** (days 15–17). Data were incomplete for days 1, 17 and 18.

attendance by day increased to 90, 95 and 99%, respectively.

During the laying and incubation periods, the female was fed by the male at the nest. Feeding visits by the male started, on average, at 05:54 hrs (range 05:27–06:35 hrs), up to the day before the first egg hatched, on average, 32 minutes after sunrise. The last visit by the male was, on average, at 15:50 hrs (14:17–17:02 hrs), 2 hour 56 minutes before sunset. During these periods, he made an average of 7.1 feeding visits per day (range 5–8), with intervals between visits averaging 1 hour 40 minutes (range 1:19–2:07) (figs. 2 & 3). The time spent at the nest was, on average, only 33 seconds (range 7–104). Therefore, the total time spent at the nest each day by the male averaged 4.2 minutes (range 2.6–6.4) during laying and incubation (fig. 2).

The female left the nest for short periods during laying and incubation. The average time of first departure was 06:06 hrs (05:27–07:53 hrs), 44 minutes after sunrise. The last departure was at 14:54 hrs (09:33–16:42 hrs), 3 hours 56 minutes before sunset. She left the nest 3–5 times per day during laying for, on average, 15.7 minutes (range 2.3–108.9). During incubation, departures fell to only two per day, but increased to 4–6 per day just prior to hatching. Mean departure times during incubation were 3.1 minutes (range 0.9–9.0), totalling 11.5 minutes (range 2–25) per day (fig. 1). She may have been fed by the male during these absences, or she may have fed herself; the absences were quite short, however, so feeding opportunities would have been limited. On

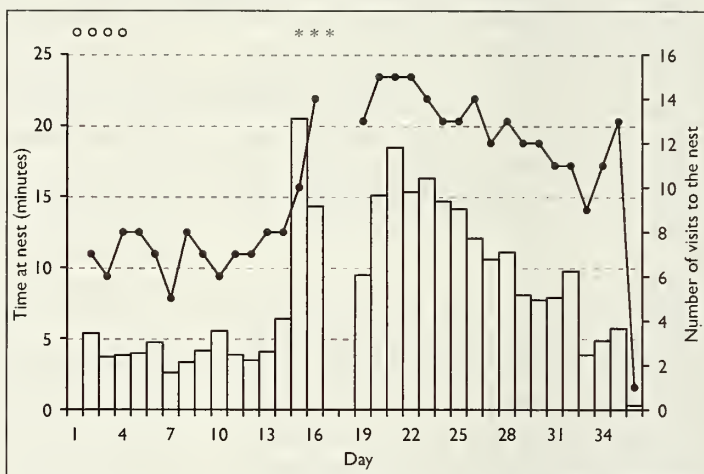


Fig. 2. Number of visits (•) and total time spent at the nest (bars) by the male Parrot Crossbill *Loxia pytyopsittacus* throughout the nesting period at Abernethy Forest, Highland, 2002. Day 1 = 28th March. The laying period is denoted by oooo (days 1–4) and the hatching period by *** (days 15–17). Data were incomplete for days 1, 17 and 18.

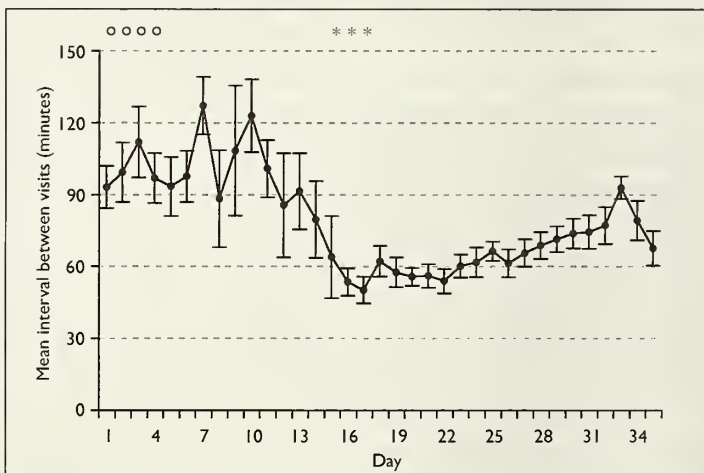


Fig. 3. Intervals (with standard errors) between visits by the male Parrot Crossbill *Loxia pytyopsittacus* to the nest at Abernethy Forest, Highland, 2002. Day 1 = 28th March. The laying period is denoted by oooo (days 1–4) and the hatching period by *** (days 15–17). Data were incomplete for days 1, 17 and 18 but the averages were based on the available data.

arriving back at the nest, she was often joined immediately by the male, who then fed her. She was present on the nest throughout each night (fig. 1).

Brood rearing

The hatching of the eggs was often visible on the film because the female would raise herself off the eggs and appear to assist the hatching chicks with her bill. However, it was not always obvious when the chicks were clear of the shell, so the time when the female was seen eating the

eggshell was taken as the approximate time of hatching. These times varied from 04:48 hrs to 13:30 hrs during 11th–13th April. Thus, the incubation periods for the four eggs were 13–14 days, assuming that the first-laid egg hatched first, and the last-laid egg hatched last.

When the first chick hatched, the feeding rate by the male increased to ten visits and his total time at the nest was 20 minutes (fig. 2). Over the following days, he made up to 15 visits per day. During this first part of the chick-rearing period, the male was providing food for the female as well as the four chicks. Usually, he regurgitated food to the female, who then fed the chicks. However, on one occasion, the male fed newly hatched chicks directly during a short absence by the female. Over the brood-rearing period, his feeding rate diminished, and the average for the whole fledgling period was 12.6 visits per day (range 9–15), excluding the last day when there was only one visit (figs. 2 & 3). Visits lasted 54 seconds on average (range 3–757), and totalled 11.6 minutes (range 3.9–20.5) per day, with average intervals of 1 hour 5 minutes (range 0.50–1.32) between visits. The average time of the first visit was earlier than during incubation (04:56 hrs, range 04:30–06:12 hrs), and the last visit was later (17:30 hrs, range 15:44–18:24 hrs) because daylength was increasing.

During brood rearing, the female gradually spent longer periods off the nest, and usually returned accompanied by the male. After feeding the chicks, she would have a spell of brooding before leaving the nest. As the chicks grew, these spells of brooding decreased in length and eventually, when the chicks were 7–9 days old, there was no brooding during the day between feeds.

Droppings were regularly removed by the adults. Most appeared to be taken away from the nest, but many were consumed by the adults, especially by the female when she was brooding the young chicks. In addition, the male occasionally fed droppings to the

female. Despite the regular cleaning by the adults, even up to the last day of the fledgling period, the nest rim became soiled with droppings.

When the chicks were 8–10 days old, the female did not brood the chicks overnight. However, she returned to brood through the next night when the chicks were 9–11 days old. In fig. 1, because the days run from midnight to midnight, it suggests that only half the night was spent on the nest during three days, but this is purely an effect of data presentation. In addition, the long periods spent at the nest on days 25 and 27 were due to brooding after sunrise. After that, there was no further night brooding. Late in the brood-rearing period, the female accompanied the male to feed the chicks and devoted a similar number of visits to the nest (mean 11.1 visits per day, range 9–13) and spent a similar amount of time at the nest as the male – on average 9.9 minutes per day (range 7–16) (fig. 1).

On the day that the chicks fledged (2nd May), there was only one visit to the nest by the parents, at 04:50 hrs. Fledging was sudden and there was no preparatory behaviour such as wing-stretching or tentative movements at the edge of the nest. Two chicks left the nest at 05:02 hrs, followed three seconds later by the other two. It is possible that the adults were nearby, but this was not recorded. The ages of the chicks at fledging were 19–21 days.



311. Parrot Crossbill *Loxia pytyopsittacus* nest at Abernethy Forest, Highland, 2002.

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The camera was allowed to run through to the afternoon of 3rd May, over which time the female made a brief appearance (at 11:00 hrs on 2nd May), but the chicks never returned.

The weather was dry during the incubation period but there were periods of rain in the latter part of the chick-rearing period (fig. 4). The average maximum temperature was 12.4°C (range 7.3–19.5°C), and average minimum was 2.1°C (range -4.2–9.7°C). There was a small but significant decline in the maximum temperature ($r_s = -0.40$), but this amounted to only about 2°C over the nesting period. There was no significant change in the minimum temperature ($r_s = 0.13$). Most days were dry, and there were only two days (28th and 29th April, days 32 and 33) when over 10 mm of rain fell. The lower number of visits to the nest at this time (fig. 2) was perhaps a response to the rain.

Total attendance at the nest

During laying and incubation, the female spent almost her entire time at the nest, and this declined only when she stopped brooding the chicks through the day and then at night. By contrast, the time spent at the nest by the male

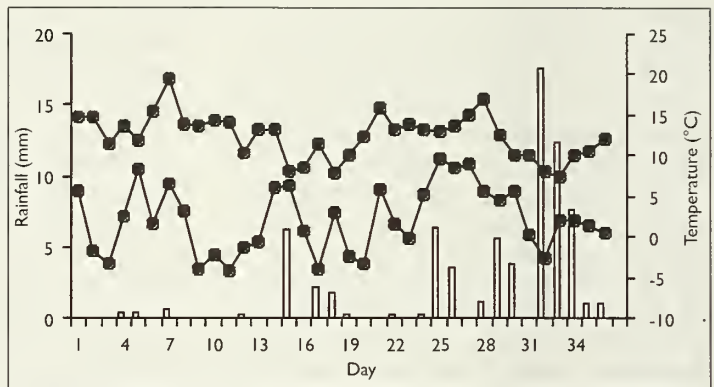


Fig. 4. Minimum and maximum air temperatures (°C) (•) and rainfall (mm) (bars) recorded during the study period at Abernethy Forest, Highland, 2002. Day 1 = 28th March.

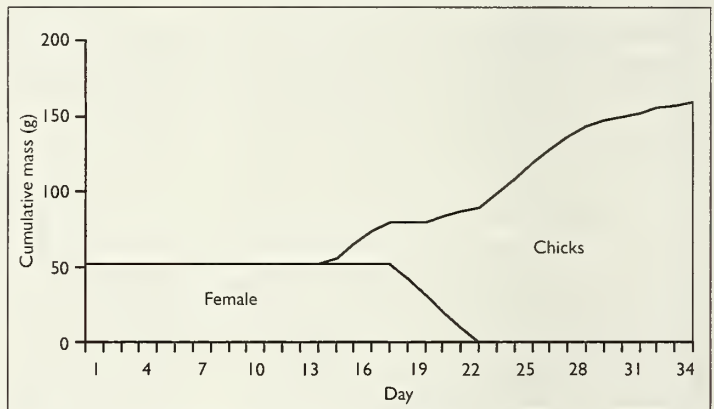


Fig. 5. The cumulative mass of Parrot Crossbill *Loxia pytyopsittacus* requiring to be fed during the nesting period, based on this study. Day 1 = 28th March. Female mass and chick growth taken from Summers (2002).

was tiny, but he delivered most of the food consumed by the incubating female and the young (table 2). His contribution to maintaining the female and the chicks can be portrayed by the changes in the cumulative biomass of crossbills requiring to be fed (fig. 5). The importance of the additional help from the female can be seen at the latter stages of chick growth, when the cumulative biomass rises to a peak.

Table 2. Total times (hours), and number of visits made to the nest by a male and female Parrot Crossbill *Loxia pytyopsittacus* at Abernethy Forest, Highland, 2002.

	Laying (4 days, 96 hours)	Incubation (10 days, 240 hours)	Brood rearing (21.2 days, 508.9 hours)	Total (35.2 days, 845 hours)
Female				
Time at nest (hours)	89.9	238.1	205.9	533.9
Male				
Time at nest (hours)	0.3	0.7	4.1	5.1
Number of visits	28	71	268	367

Discussion

Egg-laying and incubation

In many respects, the results of this study closely match earlier descriptions of crossbill behaviour at the nest. It was confirmed that crossbills lay their eggs daily (Cramp & Perrins 1994). Nethersole-Thompson (1975) found that they seldom started 'serious' incubation until the second or third egg was laid, an observation also made by others (Bailey *et al.* 1953; Christensen 1957). By contrast, Olsson (1964) and Newton (1972) found that they started incubation with the first egg, so that hatching was asynchronous. It is difficult to be sure what is meant by 'serious' incubation. Admittedly, in this study, the female's attendance was slightly less during egg-laying (fig. 1), but attendance, and presumably incubation, did comprise the majority of the day, even on the first day (64%), supporting the observations that incubation starts early in egg-laying. Given that crossbills start breeding in late winter, there are reports of unbrooded eggs freezing and cracking (Nethersole-Thompson 1975); by starting incubation with the first egg, this possibility is presumably minimised (Newton 1972).

Absences by the female from the nest during the incubation period have been variously reported as up to 45 minutes (in Sweden; Olsson 1964), 1–17 minutes, up to four times per day (Nethersole-Thompson 1975), and 2–14 minutes (in Norfolk, Davidson 1985). In this study, the female left the nest for an average of 3.1 minutes, 2–6 times per day.

Nethersole-Thompson (1975, p. 96) noted that the male provides the female with 7–10 meals per day, at the nest or nearby, at intervals of 0.5–2.5 hours, though females sometimes fly off to defecate, feed and drink in the absence of the mate and so do consume more than this. In Finland (Hildén in Nethersole-Thompson 1975) and in Sweden (Olsson 1964) the female was fed every 2–2.5 hours, and in Colorado every 1–3 hours (Bailey *et al.* 1953). In Scotland, Nethersole-Thompson (1975, p. 99) recorded the first feed at

06:33 hrs and the last at 16:55 hrs. In this study, the male made on average 7.1 visits per day during the incubation period, starting, on average, at 05:54 hrs and finishing at 15:50 hrs. The earlier times in this study may be due to seasonal differences in the observations.

Nethersole-Thompson (1975, p. 100) estimated that the mean incubation period (based on the last-laid egg at six nests) was 13.2 days. Olsson (1964) gave 14, 15, 16 days at three nests, and Bailey *et al.* (1953) reported 14 days. In this study, the incubation for the four eggs was 13–14 days, with 13 days for the last-laid egg. Eggshells are either eaten or removed from the nest (Nethersole-Thompson 1975). In this study, they were all eaten by the female.

Brood rearing

Nethersole-Thompson (1975, p. 103) found that the female broods the young for much of the day for five days, and leaves for only short periods, seldom longer than 20 minutes; she often returns with the male and is fed on the nest. After five days, the female went with the male to help to gather food for the young. In this study, the female gradually diminished her brood attendance over six days after hatching and no longer brooded by day once the chicks were 7–9 days old.

In the mid part of brood rearing, feeds occurred every 0.5–1.5 hours (Nethersole-Thompson 1975). At Kandalaksha, north-west Russia, the pair fed the young every 65 minutes (range 43–83); the first meal was 2.5 hours after



312. Parrot Crossbill *Loxia pytyopsittacus* nestlings, Abernethy Forest, Highland, 2001.

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sunrise and the last three hours before sunset (Kokhanov & Gaev 1970). Olsson (1964) made observations at three nests, noting that young were fed at intervals of 1.25 hours. The female did all the feeding up to 7–8 days, having first been fed by the male. In this study, the first feed by the male to the chicks was before the last egg had hatched. This was during a brief absence by the female, so was unusual.

For about ten days, the female broods at night (Cramp & Perrins 1994). In this study, the chicks were 8–10 days old when first left overnight. By this time, they are presumably sufficiently well feathered and large enough to maintain their body temperature.

Nethersole-Thompson (1975, p. 109) and Olsson (1964) noted that after the female fed the chicks, she ate the droppings. When the male started to feed chicks, he also ate droppings. After 14 days, nest hygiene is abandoned and droppings are allowed to accumulate (Nethersole-Thompson 1975). In this study, it was not possible to see what happened to all droppings, but a dropping appeared to be removed by both parents each time they visited the nest to feed the chicks. It could have been eaten or just dropped after the parents left the nest. Nest hygiene was maintained through the brood-rearing period, but latterly the parents were unable to remove all the droppings, resulting in their accumulation around the nest rim.

Nethersole-Thompson (1975) noted that parents reduce feeding visits to induce fledging. In this study, there was no indication of this, and the chicks were fed by the parents 12 minutes prior to fledging. Age at fledging has been estimated only a few times. At six nests, the values were 17–18, 18–20, 22–24 and 23–25 days (Nethersole-Thompson 1975, p. 112); 19, 25, 25 and 21 or 22 days (Olsson 1964); 22 and 23 days (Kokhanov & Gaev 1970); and 18–20 days (Bailey *et al.* 1953). In this study, the chicks were 19–21 days old when they fledged. Bailey *et al.* (1953) and Nethersole-Thompson (1975) found that young crossbills may return to the nest after fledging, to roost there by night. In this study, the young did not return after fledging.

Total attendance at the nest

The main insight of this study was the detail on the number of nest visits by the adults and how

they changed during the nest cycle. For example, the pattern of visits by the male remained unchanged through the laying and incubation periods, when he was feeding only the female, but immediately increased when the chicks hatched. During the early part of chick rearing, the male alone gathered the food for the chicks and female. However, as the female started to take a greater share in brood rearing, the number of visits by the male declined (fig. 2). The chicks, of course, were growing, so the amount of food being delivered to the nest reached its maximum just prior to fledging (fig. 5).

It was notable that visits by the parents to feed the chicks were synchronised. Such behaviour halves the potential number of separate flights to the nest and therefore may reduce the chances of a predator noticing the location of the nest.

Acknowledgments

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Northbound migrant raptors in June and July at the Strait of Gibraltar

Ernest F. J. Garcia and Keith J. Bensusan

ABSTRACT A small but significant northward movement of raptors occurs across the Strait of Gibraltar in June and July, following the main spring passage. Six key species – Honey-buzzard *Pernis apivorus*, Black Kite *Milvus migrans*, Egyptian Vulture *Neophron percnopterus*, Griffon Vulture *Gyps fulvus*, Short-toed Eagle *Circaetus gallicus* and Booted Eagle *Aquila pennata* – continue to arrive throughout June, while the passage of Short-toed Eagles and Honey-buzzards in particular persists into July. The possible reasons for this protracted passage are discussed.

The northbound migration of raptors across the Strait of Gibraltar in spring has received less attention than the southbound, or 'autumn', passage. In particular, co-ordinated counts along the entire width of the Strait have been attempted only in autumn, beginning with the studies by the Grupo Español de Migración de Rapaces (GEMRA) in 1972 (Bernis 1980) and continuing today under the auspices of Programa Migres (Consejería de Medio Ambiente de Andalucía [Andalucian environment agency], in collaboration with the Sociedad Española de Ornitología). Spring movements are much harder to monitor fully since the arrival front may extend from Cape Trafalgar, Spain, in the west to Gibraltar in the east, a span of some 60 km; some species, notably Honey-buzzards *Pernis apivorus*, can arrive on an even broader front. Nonetheless, many observations of the spring passage have been carried out, especially at Gibraltar itself, where monitoring has taken place, albeit variable in coverage, during most years from 1964 until the present day, with some records available from earlier periods.

Gibraltar is particularly well suited for detecting small-scale movements of migrating birds, including raptors. The community of breeding species is limited and includes only three diurnal raptors: Lesser Kestrel *F. nau-*

manni, Common Kestrel *F. tinnunculus* and Peregrine Falcon *Falco peregrinus*. Moreover, Gibraltar is a small, isolated promontory, separated from the mainland by the flat, exposed and heavily urbanised isthmus, which may explain why it is seldom visited by raptors resident in the hinterland. It is thus relatively easy to detect migrants, even single individuals, which is not the case further west, for example around Tarifa Island, Spain, the southernmost point of the Iberian Peninsula. In June and July, most raptors approach Gibraltar from a southerly or southwesterly direction, as is the case during the core part of the spring passage. Northbound raptors cross the Strait almost entirely during westerly winds (Finlayson *et al.* 1976; Cortes *et al.* 1980; Finlayson 1992) and virtually all the records discussed here were made when winds were in the westerly sector. Cortes *et al.* (1980) and Finlayson (1992) documented the existence of raptor arrivals during the first half of June. Fifteen years of additional observations have established that arrivals continue throughout June and, in some cases, throughout July as well.

Methods

Records were extracted from the archives of the Gibraltar Ornithological & Natural History Society (GONHS), covering the years



313. Short-toed Eagle *Circaetus gallicus* mobbed by Yellow-legged Gull *Larus michahellis*, Gibraltar, 2005.

1964–2006. Most observations at Gibraltar, and indeed elsewhere along the northern shore of the Strait, take place between late February and late May. These are periods when large movements of raptors occur and the flow of birds may be considerable. Sustained observations have seldom been attempted later than the end of May, by which time most migrating raptors have passed into Europe. In contrast, June and July are often unproductive months, with few birds passing even during apparently ideal conditions. It is clearly impractical to maintain a regular watch at this time, although systematic recording would be ideal. Many of the data presented here necessarily originate from incidental observations, albeit over a period of 43 years, often by observers engaged in activities such as seabird monitoring.

June arrivals coincide with the fledging period of the large Gibraltar population of

Yellow-legged Gulls *Larus michahellis*. At this time, migrating Short-toed Eagles *Circaetus gallicus* and Griffon Vultures *Gyps fulvus* in particular suffer considerable persecution by the gulls, which mob them aggressively. Not infrequently, individuals are brought down in the sea, where many drown, but some are rescued and rehabilitated by the GONHS, which maintains an experienced team for the purpose. Many late-season records, especially of the larger raptors, result from observers having been alerted to their presence by the clamour of the gulls.

Results

A total of 3,519 raptors of 13 species were observed during June and July between 1964 and 2006 inclusive. Observations were widely scattered within this period, although in some years no late-passage raptors were recorded. Six species – Honey-buzzard, Black Kite *Milvus*

Table 1. Total numbers of Honey-buzzard *Pernis apivorus*, Black Kite *Milvus migrans*, Egyptian Vulture *Neophron percnopterus*, Griffon Vulture *Gyps fulvus*, Short-toed Eagle *Circaetus gallicus* and Booted Eagle *Aquila pennata* recorded on northward passage in June and July at Gibraltar, 1964–2006.

	Honey-buzzard	Black Kite	Egyptian Vulture	Griffon Vulture	Short-toed Eagle	Booted Eagle
June	1,374	1,281	28	448	103	132
July	75	5	2	12	41	4
Combined total	1,449	1,286	30	460	144	136

migrans, Egyptian Vulture *Neophron percnopterus*, Griffon Vulture, Short-toed Eagle and Booted Eagle *Aquila pennata* – accounted for 99.6% of all sightings (table 1), with a combined total of 3,505 individuals. The majority of observations were made during June, but 5.2% of the Honey-buzzards and 28.5% of the Short-toed Eagles occurred during July.

Honey-buzzard

Honey-buzzard is invariably the last of the major raptor species to appear at the Strait in spring, there being no records from Gibraltar earlier than mid April. The date of the earliest sightings since 2000 ranges from 17th April in 2006 to 25th April in 2002; these dates are typical and consistent with those for previous years. Numbers increase rapidly thereafter, and peak movements occur during the last few days of April and the first week of May (Cortes *et al.* 1980). By mid May the majority have passed through but small parties continue to be seen until the end of the month. Passage continues throughout June (fig. 1) but most June sightings involve single birds and small parties (of up to ten individuals). In some years, however, larger June movements suggest that the main passage has been delayed. This was particularly noticeable in 1987, which produced counts of 113 on 1st June, 206 on 7th and 131 on 10th. A count of 280 on 3rd June 1990 was also unusual. These are the only three-figure June counts during 1964–2006, and together account for 50.3% of all the late Honey-buzzard records. Honey-buzzards continue on passage until the end of July but very few individuals are involved; most July sightings are of single birds or groups of up to four, and eight on 4th July 1987 and 11 on 10th July 1993 are the highest day counts on record for this month.

Black Kite

Black Kites are currently the most abundant migrant raptor at Gibraltar. They begin to

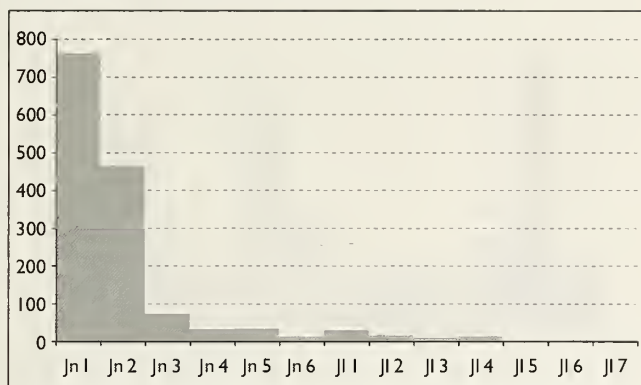


Fig. 1. Total number of Honey-buzzards *Pernis apivorus* recorded at Gibraltar in June and July from 1964 to 2006, in five-day periods from 1st June to 31st July.

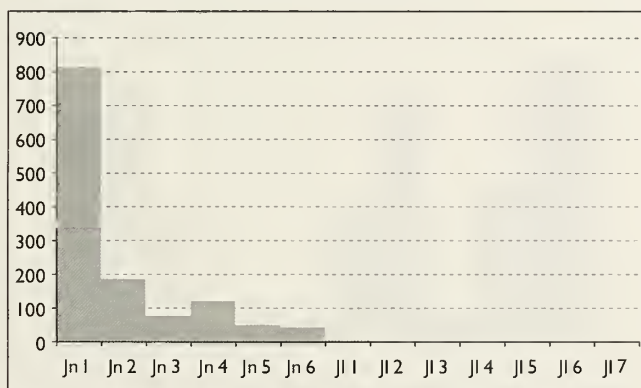


Fig. 2. Total number of Black Kites *Milvus migrans* recorded at Gibraltar in June and July from 1964 to 2006, in five-day periods from 1st June to 31st July.

arrive in February and flocks continue to move north until late May. The main arrivals are in March but significant numbers continue through April and May (Finlayson 1992). Small flocks of up to 50 may occur in June (fig. 2), especially up to 20th but occasionally later; 31 on 27th June 2003 is particularly noteworthy. Maximum day counts in June are 102 on 3rd June 2003, and 119 on 20th June 2002. The only July records are of four on 1st July. The age class of most Black Kites was not recorded, but 'immatures' were seen on a number of occasions. Black Kites begin primary moult in mid May (Cramp & Simmons 1980), and June birds were often noted in active moult, typically replacing one or more pairs of inner primaries and sometimes also the central tail feathers.

Egyptian Vulture

Egyptian Vulture is the least common of the regular late-season migrant raptors at Gibraltar,

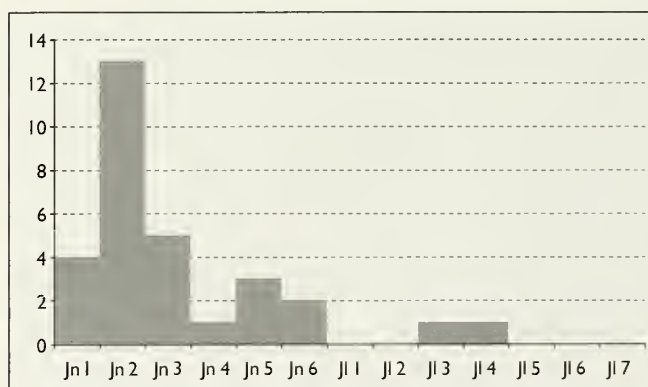


Fig. 3. Total number of Egyptian Vultures *Neophron percnopterus* recorded at Gibraltar in June and July from 1964 to 2006, in five-day periods from 1st June to 31st July.

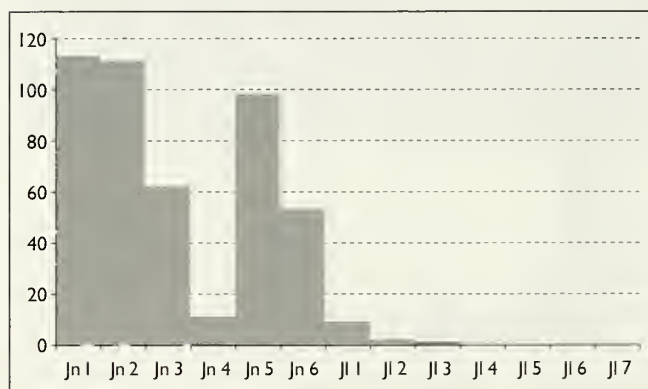


Fig. 4. Total number of Griffon Vultures *Gyps fulvus* recorded at Gibraltar in June and July from 1964 to 2006, in five-day periods 1st June to 31st July.

but records are widely spread throughout June, and clearly a few may be expected in June in most years (fig. 3). There are just two July records, both of single birds. The main passage is in March, but is prolonged and extends throughout April and May (Cortes *et al.* 1980). Only two adults were recorded in June and July, the remainder being immatures, although specific age classes were not recorded in most cases.

Griffon Vulture

Griffon Vulture has increased dramatically as a breeding bird in Spain in recent years (the breeding population increased by 506% between 1979 and 1999, to 22,455 pairs; Martí & del Moral 2003), and this is reflected in the numbers recorded at Gibraltar. Griffon Vultures may arrive at Gibraltar as early as February but their principal movement occurs much later, in May, and clearly extends into June (fig. 4). June records have involved flocks of up to 55 (on 4th

June 1993), but most records are typically of 1–25 individuals. There are just seven July records, the latest being a single bird on 13th July 1990. In addition, an individual that arrived at Gibraltar from the Strait on 3rd August 2004 was quite exceptional. Only immatures have been identified during late-season movements. The arrival of sizeable groups throughout much of June suggests that larger arrivals occur further west, where the crossing is shorter. The southbound passage of Griffon Vultures in October and November now involves several thousand birds and is concentrated as the Strait narrows at Tarifa (pers. obs.). These movements are too late to be monitored by Programa Migres but it is highly likely that more occur now than in the recent past; the same is probably true of spring records as a whole. No fewer than 285 (62%) of the 460 Griffon Vultures recorded in June and July were seen during 2001–06. This most conspicuous of species is the least likely to have been overlooked in earlier years, especially because its presence

invariably rouses the Yellow-legged Gulls into clamorous antipathy.

June arrivals of Griffon Vultures were a particular feature at Gibraltar in 2002 (total 108 birds), and 2005 (107); both months were notable for prolonged westerlies. Fifty arrived at Tarifa Island on 10th June 2005 in strong easterly winds, after a difficult crossing during which three crashed into the sea and drowned (Cuenca & Muñoz 2005); in addition the local press reported 11 dead Griffon Vultures washed up on the north shore of the Strait during June 2005. On 15th June 2006, Mario Mosquera (pers. comm.) counted 151 Griffons, two Honey-buzzards, 47 Black Kites and six Booted Eagles in just one hour at Getares Bay, 7 km west of Gibraltar. All these observations suggest a significant northward movement of Griffon Vultures across the Strait in June, long after the start of the breeding season, which may begin as early as January in southern Spain.

Short-toed Eagle

Short-toed Eagle also has a prolonged passage period at Gibraltar, with a clear peak from late February to mid March, when most of the dark-breasted adults arrive (Cortes *et al.* 1980; Finlayson 1992). Passage continues throughout April and May, with small numbers in June and July. These late birds are almost invariably immatures, with extremely pale underparts and lacking a dark throat and dark breast markings, indicating that they are second- and third-calendar-year birds (Forsman 1999; Campora & Cattaneo 2005). Short-toed Eagles arrive singly and most day counts are of just one or two birds. Larger day counts in June have included 15 on 6th June 1978, eight on 22nd June 2003 and 15 on 25th June 2004. As noted above, 28.5% of late-arrival Short-toed Eagles occurred in July, a much higher percentage than for the other species discussed.

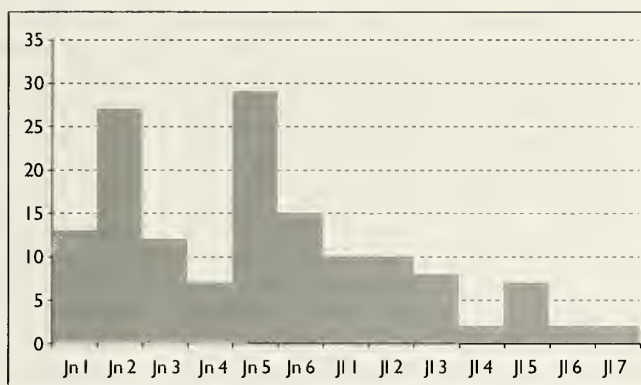


Fig. 5. Total number of Short-toed Eagles *Circaetus gallicus* recorded at Gibraltar in June and July from 1964 to 2006, in five-day periods from 1st June to 31st July.

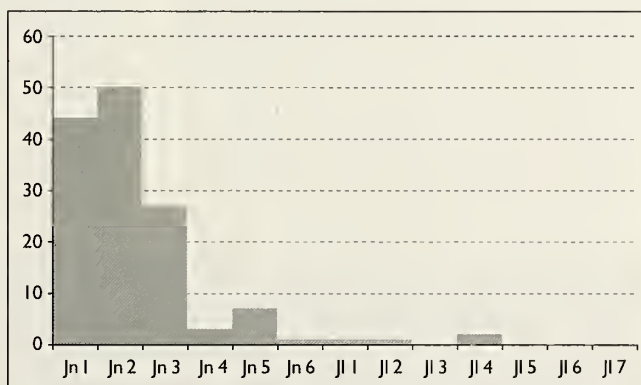


Fig. 6. Total number of Booted Eagles *Aquila pennata* recorded at Gibraltar in June and July from 1964 to 2006, in five-day periods from 1st June to 31st July.

Booted Eagle

Booted Eagles begin to arrive over Gibraltar in mid March (Cortes *et al.* 1980), and reach a peak in April. Significant numbers continue during May, while a trickle persists until mid June (fig. 6). Most day counts in June are of one or two birds, but 25 were seen on 4th June 1993 and 17 on 13th June 1982. The first July records were in 2006, when four individuals were logged, the latest being two birds on 20th.

Rüppell's Vulture

One species which may yet prove to be regular in June and July is Rüppell's Vulture *G. rueppellii*. The first record for the area was in 2005, when a subadult arrived with Griffon Vultures at Tarifa Island on 10th June. Later that year, a juvenile was at Tarifa beach on 7th July (López Velasco 2005). The first for Gibraltar, a juvenile, appeared on 23rd July 2006 after crossing the Strait (plate 314). This species, which associates with Griffon Vultures, is a recent and increasingly frequent visitor to Spain (Gutiérrez 2003; Forsman 2005).

Other species

Several other raptor species have been recorded on northbound passage during June and July. There are six records of Osprey *Pandion haliaetus*, including three on 13th June 1978 (also the latest date). A Marsh Harrier *Circus aeruginosus* was seen on 14th June 1978; a Common Buzzard *B. buteo* on 5th July 2006; single Long-legged Buzzards *Buteo rufinus* on 13th June 1966, 22nd July 2003 and 29th October 2003; and single Hobbies *F. subbuteo* on 9th June 1977 and 13th June 1982.

Discussion

These observations of birds returning to Europe, long after the start of the breeding season for all the species concerned, may appear paradoxical. The possibility that they may be local birds dispersing, and not migrants, has been discounted since all arrivals have been from the Strait and not from the hinterland to

the north and west of Gibraltar. In any event, of the principal species involved, Honey-buzzard does not nest near Gibraltar and both Black Kite and Egyptian Vulture are rare breeders locally. Moreover, the birds pass purposefully north, following the same routes as migrant raptors during peak passage periods.

The possibility that some July records involve southbound birds which have aborted their crossing of the Strait and turned back north has also been considered. Certainly, some raptors do abandon their southward crossing and return to land, presumably to try again later. At Gibraltar, the species most frequently recorded doing so is Black Kite, the earliest of the key species to leave its European breeding grounds. In late July and August, small flocks often arrive from the Strait when the main population is migrating south, always when a large southward passage is in progress, and always a small minority of those involved. The other key species are later migrants. Honey-buzzards begin to return from mid August onwards (being powerful fliers, they only rarely abort

their journeys across the Strait in response to severe weather conditions), Egyptian Vultures return in August and September, Short-toed and Booted Eagles in September and October, and Griffon Vultures in October and November.

It seems clear that late northward passage at Gibraltar is a real phenomenon. The scale of the movements is small in relation to peak passage periods, but significant numbers of birds are involved nonetheless. Moreover, the limited observer coverage suggests that between several hundred and a few thousand birds must cross the Strait annually during this period.

The biological significance of returning to Europe so late is open to speculation. These birds will arrive too late to breed and, in any case, the majority are immatures. Perhaps they are simply individuals with a weak migratory urge, although immatures of various species typically remain in Africa throughout the year, and return to Europe only when old enough to breed. For example, there are numerous records of Booted Eagles, Short-toed Eagles and Ospreys from West Africa during the northern



314. Juvenile Rüppell's Vulture *Gyps rueppellii*, the first record for Gibraltar, July 2006.

summer (Thiollay 1977). Perhaps some are driven out of African winter quarters late in the northern spring by changes in local climate, reduced food availability, or by a seasonal increase in competition with Afrotropical species.

Some immature raptors undoubtedly move north during the main passage periods, although adults generally move ahead of immatures (Kerlinger 1989). Berthold (2001) described such behaviour as a graded return, a strategy in which birds migrate late or only part of the way towards future breeding areas, summing in suitable areas as non-breeders, perhaps to avoid unnecessary migration. Late arrival may also be an example of exploratory migration (*sensu* Baker 1978), in which individuals benefit from spending time locating and evaluating territories in which they will breed subsequently. Arriving late would also make it easier to detect vacant territories; young birds are unlikely to prevail against older and more experienced birds if they arrive early. There may be other advantages in arriving late. For example, most adult Short-toed Eagles return to Spain in March, when reptile prey may be difficult to find; later birds avoid such lean periods. Insect and other prey is more abundant later in the season too, while vegetation dieback during summer drought may make prey and carrion detection easier for inexperienced birds.

Late-season arrivals do not appear to have been reported from other raptor migration sites around the Mediterranean, although there is limited or no survey effort after late May at Cape Bon, Tunisia, the Sicilian narrows, in Italy, or at the Bosphorus, Turkey. Observers at Eilat, southern Israel, farther south than Gibraltar, have reported northward passage of Honey-buzzards as late as 17th June, of Black Kites until 19th June, and of Booted Eagles until 10th June (Shirihai *et al.* 2000). In general, the extent of late raptor arrival has been poorly monitored. The Gibraltar observations suggest that it should be looked for more widely in future.

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Acknowledgments

We would like to thank the hundreds of observers who have contributed to the raptor records collected by GONHS since 1964. Their indispensable contribution is gratefully acknowledged. Special mention must be made of those whose involvement has spanned many years and continues today: Paul Acolina, John Cortés, Clive Finlayson, Andrew Fortuna, Mario Mosquera, Charles Perez, Nigel Ramos, Paul Rocca, Roger Rutherford and Albert Yome. We are grateful to John Cortés and Mario Mosquera for commenting on the manuscript.

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Notes

All Notes submitted to *British Birds* are subject to independent review, either by the Notes Panel or by the BB Editorial Board. Those considered appropriate for BB will be published either here or on our website (www.britishbirds.co.uk) subject to the availability of space.

Northern Gannets soaring

Reports of Northern Gannets *Morus bassanus* thermalling have been published recently in *BB* (see *Brit. Birds* 96: 252; 97: 249–250). The following observations of adult Gannets were made on Alderney, Channel Islands, overlooking the gannetry on the nearby islets of Les Etacs. Gannets regularly soar in thermals over the sea here when there is an offshore wind on a hot day, sometimes reaching 150 m above sea level; up to 200 Gannets have been observed in a single thermal close to the gannetry, with smaller numbers up to 6 km from it. Gannets also soar on orographic uplift, particularly on wind deflected upwards from the 35° slope of the north face of the gannetry's main islet.

Late in the breeding season, after many young have fledged, a different type of soaring is practised. Using orographic uplift, Gannets will soar to some height over the north face of the main islet, then dive northwards away from the islet, turn back towards it, and come in fast and low over the islet before soaring once more and repeating the cycle. This sequence of repeated soaring and diving is employed by

many Gannets, so many that it can be difficult to keep track of the same bird. On the morning of 2nd October 2004, I counted a maximum of seven full cycles by one individual before I lost track of it. The behaviour occurs with a stiff wind, especially against the inclined north face. On days without orographic uplift, this behaviour is uncommon. The total soaring climb, with no wing flaps, is generally about 40–50 m from start to finish (heights reached by the Gannets are easy to estimate when watching from the adjacent 70-m cliff). The fastest of 14 soaring climbs timed on 3rd October 2004 was 10 seconds to climb c. 50 m, and the slowest was 27 seconds to climb c. 40 m.

Soaring is also used by commuting Gannets. On 7th June 2004, a flock of nine returning past Alderney towards the colony glided along on orographic uplift for some hundreds of metres close to and just above the edge of a 70-m cliff-top. On 11th August 2006, a returning flock of eight Gannets thermalled upwards close to and above the same cliff-top, then glided onwards to continue their journey.

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Bar-tailed Godwit feeding on carrion

On 10th February 2006, at the fishing village of Iwik in the Parc National du Banc d'Arguin, Mauritania, I observed a Bar-tailed Godwit *Limosa lapponica* feeding on a dead fish for several minutes. The fish was about 28 cm long and similar in shape to a Roach *Rutilus rutilus*. The godwit inserted its bill into the fish at or close to the vent, from a variety of angles and positions, mainly to the extent of half or three-quarters of its bill length but on several occa-

sions to within 1 cm or so of the feathering of the forehead. It fed with a series of probes, nearly as rapidly as godwits do when observed feeding in water. A Sanderling *Calidris alba* was standing about half a metre away, apparently awaiting its turn to feed (cf. *Brit. Birds* 74: 521–522).

While the eating of carrion by waders is not unknown, I can find no reference to Bar-tailed Godwits doing so.

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The prey of breeding Barn Owls on Skomer, and evidence for mainland foraging

The first confirmed breeding record of Barn Owl *Tyto alba* on Skomer Island, Pembrokeshire, since 1897 occurred in 2004 and provided an opportunity to analyse material from the nestbox. A previous study of Barn Owl pellets found on Skomer suggested that all prey items had been taken on the island (Brown & Twigg 1971). This note describes an analysis of the prey of a pair of Barn Owls that bred successfully on the island in 2004, fledging two young.

On Skomer, which lies 1 km from the Pembrokeshire mainland, the small-mammal fauna comprises Common Shrew *Sorex araneus*, Pygmy Shrew *S. minutus*, Wood Mouse *Apodemus sylvaticus*, Bank Vole *Clethrionomys glareolus skomerensis* ('Skomer Vole') and Rabbit *Oryctolagus cuniculus*.

Skulls and dentaries were used to identify and estimate the number of small mammals contained in remains retrieved from the nestbox (Yalden 2003). For each mammal species, separate counts were made for skulls and left and right dentaries, with the greatest count being used to estimate the number of individuals. Amphibians were identified and counted by the number of tibio-fibula bones; these consisted of Common Frog *Rana temporaria* and Common Toad *Bufo bufo*, although it was not possible to separate these two species from the remains collected. Birds were identified from humerus bones. A number of inverte-

brate prey items were recorded, mainly ground beetles (Carabidae), but were present in only small quantities and are not considered to be important in the diet of Barn Owls (Glue 1974).

Eight mammalian prey species were recorded, with the greatest proportion being Skomer Voles (table 1). The remains of Field Vole *Microtus agrestis* and Water Shrew *Neomys fodiens* clearly indicated that prey had been taken from the mainland, as these species are absent from Skomer. The dental characteristics of the upper molar (M^2) and lower molars (M^2 and M^3) are distinct and were used to identify Field Vole; Water Shrew was identified on the upper jaw, this species having four unicuspid teeth on each side (Yalden 2003). The main features that distinguish Skomer Vole from the mainland Bank Vole are the dental characteristics of the upper third molar (M^3): that of the Skomer Vole has a 'complex' condition while that of the mainland Bank Vole is 'simple' (Corbet 1964). However, Brown & Twigg (1971) noted that a complex M^3 is not always developed in the Skomer Vole.

Previous studies have suggested that Barn Owls on Skomer hunt exclusively on the island (Brown & Twigg 1971), but the presence of Field Voles and Water Shrews in the material examined confirms that the Barn Owls which bred on the island in 2004 were also hunting on the mainland. The apparent number of mainland Bank Vole remains further corroborates

Table 1. Number of prey items, percentage of prey items, number of prey units and percentage of prey units for different species found in Barn Owl *Tyto alba* pellets and other remains in a nestbox, Skomer, Pembrokeshire, 2004. Prey units give an approximation of the biomass that a particular species contributes to the diet, with 1 unit assumed to weigh 20 g (Southern 1954). Insects – 41 beetles (Coleoptera) and one grasshopper (Orthoptera) – are excluded from the analysis.

	Number prey items	Percentage prey items	Conversion factor	Prey units	Percentage prey units
Skomer Vole <i>Clethrionomys glareolus skomerensis</i>	529	37.7	1.0	529	42.1
Bank Vole <i>Clethrionomys glareolus</i>	67	4.8	1.0	67	5.3
Wood Mouse <i>Apodemus sylvaticus</i>	314	22.4	1.0	314	25.0
Field Vole <i>Microtus agrestis</i>	26	1.9	1.0	26	2.1
Common Shrew <i>Sorex araneus</i>	288	20.5	0.5	144	11.5
Pygmy Shrew <i>Sorex minutus</i>	18	1.3	0.3	5	0.4
Water Shrew <i>Neomys fodiens</i>	1	<0.1	0.75	<1	<0.1
Rabbit <i>Oryctolagus cuniculus</i>	2	0.1	5.0	10	0.8
Birds	8	0.6	1.0	8	0.6
Amphibians	151	10.8	1.0	151	12.0
Total	1,404			1,255	

this, although these may have been overestimated; they were identified solely on the complexity of the M³ molar, with 67 upper molars exhibiting the simple condition. These were all classed as mainland Bank Voles, but the possibility that some were Skomer Voles cannot be entirely ruled out; it was not possible to examine pelvic bones to differentiate between the two forms as the analysis material was not in pellet form.

Skomer covers approximately 300 ha, and would appear to be of suitable size to accommodate the average home range of a pair of Barn Owls (Roulin 2002). The 3.0-km distance from the nest to the nearest point on the mainland is at the upper end of foraging distances previously recorded for nesting Barn Owls (Roulin 2002). Densities of voles on Skomer have previously been shown to be up to four times higher than on the mainland (Healing *et al.* 1983). However, numbers of Skomer Voles were low in 2004 and declined during the course of the breeding season (Healing &

Loughran 2004), and this may have contributed to the reasons for the island Barn Owls hunting on the mainland.

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Barn Owl killed and eaten by Common Buzzards

At about 08.45 hrs on 21st March 2006, on my farm near Malvern, Worcestershire, I was greatly excited to see a Barn Owl *Tyto alba* flying

towards me, not more than 100 m away; I had not seen a Barn Owl on the farm for at least 30 years previously. However, within a few seconds, and only a matter of metres away from where I stood, the owl was knocked out of the sky by a Common Buzzard *Buteo buteo*; and when the owl was on the ground a second Buzzard swooped down and finished it off, taking no notice of me shouting and running towards it. The Buzzards carried off the body to a point some 150 m or so away, where they tore it to pieces; the photo shows what was left when I got to it.

Heimo Mikkola (*Brit. Birds* 69: 144–154) analysed literature for data on owls eaten by or eating other owls and raptors. Barn Owls were found in the prey of five Eagle Owls *Bubo bubo*, seven Northern Goshawks *Accipiter gentilis* and two Common Buzzards; the event is therefore not unique, but there must be few if any direct observations of such a kill.



Jim Bullock

315. Remains of Barn Owl *Tyto alba* killed by Common Buzzards *Buteo buteo*, near Malvern, Worcestershire, March 2006.

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Do Common Swifts emit ultrasound?

Two groups of birds, the Oilbird *Steatornis caripensis* from northern South America and Trinidad and swiftlets *Aerodramus* of the Indo-Pacific region, employ echolocation to find their way into the safety of the caves where many of them nest and roost in complete darkness. Unlike the very high-frequency (ultrasonic) vocal pulses emitted by most bats (Chiroptera), the echolocation sounds of birds are audible to the human ear as a continuous stream of sharp clicks. Sound frequencies are in the range 1–12 kHz in the Oilbird, and 1–16 kHz in the various *Aerodramus* species (Campbell & Lack 1985).

Since Common Swifts *Apus apus* also breed in dark places, I was interested to measure the exact range of sounds produced by this species to investigate whether the birds might use any form of echolocation. The human ear can register sounds in the range between 16 Hz and 16 kHz. The range of sounds emitted by the Common Swift is known to be wider than 4–8 kHz (see Glutz 1980, Bergmann & Helb 1982 and BWP); Tigges (1994) proved a range spanning 2–13 kHz.

Using a bat detector with a sensitivity range of 20–120 kHz, I monitored the sounds emitted by Common Swifts, in steps of 5 kHz, for the following categories: adults on the nest; adults returning to the nest and resulting duets; adults on the nest before egg-laying; chicks alone; chicks after the adult returned to the nest; chicks after feeding; families during the night; 'fly-bys' and nest-site checking by non-breeders;

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and colonial calls ('screaming parties'). The distance from the detector to the birds was 30–50 cm from birds in a nestbox and 0.5–10 m from flying birds.

Sounds emitted by adult Common Swifts were clearly audible on the bat detector at 20 kHz, and their sounds continued to register up to 35 kHz. The chicks did not produce any audible sounds above 20 kHz. This series of observations established that although all vocalisations made by Common Swifts are audible to the human ear (and cannot thus be properly classified as 'ultrasonic'), elements of their calls are composed of ultrasonic frequencies. The species' calls may consist of three different parts: the basic tone, the lower tone and the upper tone. The basic tone is 4–7 kHz, the lower tone may go down to 2 kHz (Tigges 1994), and the upper tone may reach 30–35 kHz, as found here. There was, however, no evidence that the Common Swift uses any form of echolocation.

Acknowledgment

I am grateful to Edward Mayer for his help with translating the text into English.

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Sylvia warblers taking nectar on autumn migration in Shetland

Salewski *et al.* (2006) suggested that nectar may be a relatively frequent but overlooked food source for migrant warblers. As well as their own observations, they quoted a disparate range of other sources for the behaviour dating back to the nineteenth century. It is worth noting that Gilbert White recorded Lesser Whitethroat *Sylvia curruca* taking nectar from Fritillary *Fritillaria meleagris* in the late eighteenth century (White 1789), while BWP *Concise* suggests, in the entry for Lesser Whitethroat, that 'records of drinking nectar... indicate that this is a regular source of energy,

especially for birds on migration'.

In Shetland in autumn, *Sylvia* warblers are often seen in *Fuchsia* bushes, one of the few large flowering plants in Shetland which retain leaves and flowers well into the autumn. It may be assumed that these bushes would be a good source of insect food, the insects being attracted by the flowers and the shelter they provide, but on several occasions I have watched *Sylvia* warblers apparently taking nectar. On 1st October 2002, I watched a female Blackcap *S. atricapilla* for over ten minutes at Norwick, Shetland, during which time it hopped through a *Fuchsia*

bush from flower to flower, carefully positioning itself below each flower before inserting its bill upwards, then waiting for about a second before withdrawing. The fact that it moved methodically from flower to flower and spent the same time at each flower strongly suggested that it was taking nectar, and not gleaning insects. On several occasions since, I have seen Blackcaps, and occasionally Garden Warblers *S. borin*, behaving in the same manner, but I didn't specifically record details. On 14th October 2002, a Barred Warbler *S. nisoria* was watched stripping *Fuchsia* flowers from a bush at Norwick and it appeared that the bird was doing this to get at the nectaries; because of its larger bill, the Barred Warbler was presumably unable

to feed in the same manner as the Blackcap.

It is already well established that *Sylvia* warblers change their diet in autumn, becoming principally frugivorous. In Shetland, where soft fruits such as blackberries *Rubus fruticosus* agg. are more or less unavailable, it is not surprising that birds use nectar as an alternative high-energy food source. It may be that nectar is a widely used food source for migrant *Sylvia* species, and possibly other warblers, in both spring and autumn.

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Unusual song of Willow Warbler

On 29th April 2006, at Chantry Fields, Gillingham, Dorset, I heard what at first I took to be a duet between a Willow Warbler *Phylloscopus trochilus* and a Common Chiffchaff *Ph. collybita*. The Willow Warbler was singing its typical song and on completion the phrase was followed immediately by several notes of typical Chiffchaff song. I soon located the Willow Warbler, in the top of a Hawthorn *Crataegus monogyna* bush, and I realised quickly that just one bird was responsible for both songs. I watched this individual for about ten minutes, during which

time it repeatedly delivered a normal Willow Warbler song, but each time ended it with usually four, sometimes six and on one occasion eight notes of typical Chiffchaff song.

In appearance, it seemed to be a perfectly normal Willow Warbler, showing all the usual morphological features, including long supercilium extending well behind the eye, pale brown legs and a long primary projection. I believe that this bird was a mimic rather than a hybrid. It was not heard again on subsequent visits to the area.

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EDITORIAL COMMENT Two *Phylloscopus* warblers with mixed Chiffchaff/Willow Warbler songs have been recorded previously in *BB* (see *Brit. Birds* 79: 340–342), although the pattern differed from that described by Gordon Hopkins; the appearance and song of a presumed hybrid Chiffchaff × Willow Warbler was described by S. R. D. & E. S. da Prato in the same issue (*Brit. Birds* 79: 341–342).

Goldcrests feeding on peanuts

On 5th February 2006, I watched a male Goldcrest *Regulus regulus* feeding on peanuts from a hanging nut feeder in my garden in Kent. This bird was singing throughout the morning in trees adjacent to the feeder site and on four separate occasions it was seen to cling confidently onto the mesh and peck repeatedly at the

peanuts inside. It successfully extracted small fragments of peanut and swallowed them. I can find no previous record of Goldcrests feeding on peanuts, or attending a hanging feeder. *BWP* mentions only seeds of spruce *Picea* and pine *Pinus* by name as plant material in the diet of this species.

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During the last two weeks of February 2006, a female Goldcrest commonly fed on the ground below a suspended peanut feeder in my Somerset garden. The Goldcrest fed on peanut fragments dropped from the cage but the bird, apparently always the same individual, arrived only when other birds (usually Great Tits *Parus*

major or Blue Tits *Cyanistes caeruleus*) were actively feeding from the nuts. It must be unusual for a Goldcrest to take food in this selective manner, although ground-feeding is not uncommon for this species. Several other bird species, however, often wait for peanut fragments to be dropped in this way.

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EDITORIAL COMMENT It is clear that the use of supplementary foods at garden feeding stations by Goldcrests is not well known or recorded, so we asked the BTO's David Glue to comment. He replied as follows:

'Enthusiastic feeders of garden birds in the New Forest, Hampshire, Edwin Cohen (Sway) and Norman Pullen (East Boldre), showed the writer how Goldcrests could be attracted to peanuts at garden feeding sites as early as the successive cold winters of 1961/62 and 1962/63. Both birdwatchers were avid experimenters, advocating crushing whole peanut kernels, either by stamping on them or by crushing them in a kitchen mincing machine. Peanut fragments placed on a raised surface (bird table or tree stump) were taken on a regular basis by Goldcrests but also by Wrens *Troglodytes troglodytes* and Blackcaps *Sylvia atricapilla*, and (less often) by Common Chiffchaff *Phylloscopus collybita*, Firecrest *R. ignicapilla* and Eurasian Treecreeper *Certhia familiaris*. The BTO's Garden Bird Feeding Survey (GBFS) has, since winter 1970/71, monitored changes in the frequency and behaviour of the UK's wintering birds taking supplementary foods (and water – at birdbaths) via systematic weekly counts at a representative cross-section of garden feeding stations. Counts by over 800 GBFS observers in the 1970s showed that Goldcrests came not infrequently to a small percentage (5%) of feeding sites (table 1). Peanuts, along with fat and water, were the regular fare, peanuts taken generally on raised surfaces, from hanging containers or as fragments beneath suspended containers alongside Wren and Dunnock *Prunella modularis* on the ground. Over time, GBFS has charted an increase in the proportion of feeding stations patronised by Goldcrest, Wren and Blackcap, but Treecreeper, Chiffchaff and Firecrest have failed to match these trends, even though these three species are regular feeders at certain sites (table 1). Winter 2005/06, the coldest in a decade, saw Goldcrests taking supplementary foods (and water) at 17% of GBFS sites sampled. Peaks in attendance at feeders from late October to the end of November and from early February to mid March possibly involved transient birds and cold-weather-related activity respectively; the UK was beset by a raw chill from the Continent in early 2006, which provided testing times for the survival of essentially insectivorous passerines. With the survival of such species in mind, the BTO has advised bird-care companies on best practice since the 1980s, drawing primarily on observations of contributors to BTO survey work. Historically, Goldcrests have been drawn primarily to fatty products, peanuts, fine seeds, and crumbs of bread, cheese and cake. Today, Goldcrests are best attracted to peanuts when crushed, split, in granular form or coated in fat and integrated within fat 'cake' or specific blends for 'insectivorous' birds; 'live' foods and rehydrated invertebrate foods provide attractive alternatives.'

Note: Extra counters for the BTO's Garden BirdWatch project are always welcomed. For more details, contact GBW, FREEPOST, BTO, The Nunnery, Thetford, Norfolk IP24 2BR; tel. 01842 750050; www.bto.org/gbw

Table 1. Insectivorous birds feeding on supplementary foods in Britain. Data show the percentage of birds recorded during the BTO's Garden Bird Feeding Survey that were feeding on supplementary foods. '1970s' includes winters from 1970/71 to 1979/80 inclusive; data from *The Garden Bird Book* (Glue, 1982).

	Winters during 1970s	Winter 2005/06
Wrens <i>Troglodytes troglodytes</i>	34%	58%
Blackcaps <i>Sylvia atricapilla</i>	10%	29%
Goldcrest <i>Regulus regulus</i>	5%	17%
Eurasian Treecreeper <i>Certhia familiaris</i>	2%	2%
Common Chiffchaff <i>Phylloscopus collybita</i>	2%	<1%
Firecrest <i>R. ignicapilla</i>	<1%	0%

Common Starlings roosting in a cave

At sunset on 14th April 2006, I was walking along the cliffs at Treshnish Point, Isle of Mull, Argyll & Bute, when I saw a flock of about 50 Common Starlings *Sturnus vulgaris* circling, in typical Starling-flock fashion, above the headland. I had noticed these flocks heading towards the cliffs on several evenings during the previous two months and I presumed that they were roosting on the cliffs. On this particular evening, I watched as the flock repeatedly dived dramatically out of sight over a cleft in the cliff edge only to reappear either further along the cliff or behind me. This happened several times – I presumed that the flock was taking its time to settle – before the birds finally disappeared into the cleft. A few minutes later a second flock, of about 55 birds, repeated this display.

Anand Prasad

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I decided to try and count the roost, but when I peered over the cliff edge I was surprised to find no birds at all. At that point, a lone Starling flew towards me, plummeted vertically below the cliff edge and disappeared. On closer inspection, I could see that this bird had flown into a cave, of which only the outer mouth was visible. I could hear a chorus of twittering, which I presumed was coming from the flock roosting in the cave.

Subsequently, on five separate dates between 10th May and 30th August 2006, at the same site, groups of up to 30 Starlings were seen to enter the same cave to roost.

BWP has no mention of Common Starlings roosting in caves, although it does seem an obvious strategy for coastal birds.

Common Starling killing and feeding scorpion to its young

On 25th May 2006, near Göreme, Cappadocia, Turkey, we were alerted to the importunate begging of a juvenile Common Starling *Sturnus vulgaris* as it pursued its parent. We could see instantly that the adult Starling held a small, pale grey-white scorpion (probably a *Buthus* sp.). The prey was clasped in the bill at a point close to the sting, with the full length of the arachnid dangling straight down in front of the adult's bill. Rather than feed this potentially hazardous item to its chick, the parent bird continued to thrash the scorpion with a sideways and downwards action against the stony track as it walked along. After several more instances of this disabling measure, the parent fed the scorpion to its chick. Immediately after passing the item over, the adult also offered its offspring

a small snail [Gastropoda] taken from the path edge. Both items were readily consumed by the young bird.

Judging by the way that the adult systematically rendered the scorpion safe before feeding the chick, and continued to ensure that it was lifeless despite the persistent begging of the youngster, we suspect that scorpions had been encountered and eaten before. Yet we can find no evidence in the literature, nor does Chris Feare know of any instance of scorpion being listed before as prey for either Common Starling or Rose-coloured Starling *Sturnus roseus*.

Acknowledgment

We are grateful to Chris Feare for reading and commenting on this article.

Mark Cocker

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Reviews

THE GREAT FEN: ARTISTS FOR NATURE IN ENGLAND

By Chris Gerrard. Langford Press, Peterborough, 2006.

165 pages; numerous colour images.

ISBN 1-904078-17-3.

Hardback, £35.00.

The latest in a series of fine-quality art books by Langford Press, this focuses on the Great Fen project as seen by an international team of 30 artists, brought together by the Artist for Nature Foundation. The

Great Fen project hopes eventually to link existing fragments of fen by restoring habitat over a 37 km² area of Cambridgeshire.

The vast majority of the 165 pages have one or more artworks, interspersed by small amounts of text by Chris Gerrard supplying historical background information about the main sites and their wildlife, and the vision of the project. Artist profiles occupy the last ten pages.

As one would expect, the artwork is very much habitat-orientated and is represented by the

widest variety of styles and disciplines. There are some impressive mood-capturing landscapes, by Denis Clavreul and Darren Rees to name but two, while Wolfgang Weber's fine pencil studies of deer are worthy of close scrutiny.

Many fenland life forms are covered in small detail, including plants and insects, but there are few detailed bird studies. Of these, the masterly watercolours of Barry van Dusen stand out.

Alan Harris

BEWICK'S SWAN

By Eileen Rees. T & AD Poyser, A&C Black, London, 2006.

296 pages; 16 pages of colour photographs; maps, tables, diagrams.

ISBN 0-7136-6559-9.

Hardback, £40.00.

This is an excellent book, indeed one of the best of recent offerings from Poyser, based as it is on the author's long-term studies and extensive knowledge of Bewick's Swans *Cygnus columbianus*.

At just under 300 pages, it is not a particularly long book – and indeed 60 of these are devoted to appendices, tables and references – but therein lies the key to its success. Eileen Rees has managed to distil a lifetime of her own studies and a host of scientific research by others into a tight, scholarly account of this enigmatic species. However, this is no dry scientific text aimed purely at academics, and from the opening lines ('Of all the species of bird on this planet, the Bewick's Swan must be one of the most appealing') you begin to get a feeling for the intimate knowledge and respect that the author has for the species. For some 30 years, Eileen Rees has observed and studied the behaviour, movements, lives and deaths of Bewick's Swans, and one cannot undertake a study of such long-lived birds (known

individuals have reached 29 years in the wild, 36 in captivity) without becoming attached to them somewhere along the way.

From the identification and naming of Bewick's Swan as a separate species of 'Wild Swan' in the early nineteenth century (just how and when it was first identified as a separate species, and by whom, is an interesting story) to the use of satellite transmitters to track its autumn migration in 2003 (which attracted a national audience through its coverage by BBC Radio 4's *Migration Watch*), Eileen has covered the ground with thoroughness, objectivity and the occasional glimpse of a dry sense of humour. It is a sobering thought that had she stopped her studies in 1990, we would know next to nothing about the breeding behaviour of this species on the Russian tundra. When, in 1991, Eileen Rees and Dafila Scott (who provided the excellent illustrations for the book) made the first of what are now annual expeditions by WWT to the Pechora Delta, they were probably the first British people to set foot there since the great explorer and naturalist Henry Seebohm at the back end of the nineteenth century!

The layout and contents follow a logical and well-used format, the eight chapters beginning with a look at swans in general and the taxonomy and phylogeny of the Bewick's Swan in particular, and

ending with a discussion of threats and conservation measures. Perhaps because the author has a scientific background, there is particular emphasis on understanding the reasons behind the numerous facts, detailed tables and observations, rather than just describing or reporting them. We are also encouraged to see the swans' numbers and distribution (chapter 2), their migrations and movements (chapter 3), and their choice of food and feeding ecology (chapter 4) very much in the light of their overall lifetime reproductive success and the implications that this has for species survival (chapter 7).

The author's own work features strongly in two of the most interesting chapters, those on breeding biology (chapter 5) and social behaviour in winter (chapter 6). In the former, we are given an insight into aspects of Bewick's Swan biology that for most people are new, being based on studies of birds breeding in the Russian tundra. Given the location, recent history and nature of this area, it would perhaps have been good to learn a little more about how the author and her colleagues undertook their work and their view of post-glasnost Russia. Social behaviour in winter is something that British birdwatchers are more used to, but here is a very readable account of what lies behind the displays, the dominance hierarchies and other social interactions to

be seen in winter flocks.

If I do have any criticisms, they are more to do with what feels like a slightly miserly approach to the production of the book itself, rather than with its contents or the author. At 47 lines to a page and with page margins as tight as 1 cm, the text appears to be a little unnecessarily

crammed onto the page. Similarly, while the 21 colour photos are of superb quality (particularly those of a juvenile White-tailed Eagle *Haliaeetus albicilla* harassing swans, or the several which feature swans feeding in fields), many feel too small to really do them justice. As for the cover, when one already has

an illustrator as good and as sympathetic towards the subject as Dafila Scott, why go elsewhere?

But these are minor presentational details. This is a scholarly book, well written and a fine addition to the Poyser stable.

Chris Spray

ON SPARROWS AND MAN

By J. Denis Summers-Smith.

Privately published,
Guisborough, 2005.

112 pages; 34 colour plates.

ISBN 0-9525383-2-6.

Hardback, £15.00.

Available from the author
(e-mail jdss@tribology.co.uk;
p&p £1.50).

Denis Summers-Smith needs no introduction; he is probably the world's leading authority on sparrows and before this little book appeared he had produced four others on the family, including two notable monographs, as well as papers in this journal and elsewhere. This new venture is something of a departure from his more 'formal' writings and explores our relationships with these fascinating (but all too often ignored or overlooked) little birds. Not surpris-

ingly, much of it is about House Sparrows *Passer domesticus*.

After two short introductory chapters, we see sparrows as pets, as 'sex-mad' birds, in history, as pests and in art, a chapter on sparrow pots (you'll have to read the book to discover what these are), another on adaptability and, finally, one on the House Sparrow in decline. There is much of interest here, but I have to confess that I would have liked a bit less poetry and a bit more detail on some of the other aspects of sparrow-man relationships. Several times, just as I was getting really interested in a particular story, it ended and was replaced by something else. I cannot fault the author's comments on the House Sparrow decline, however, where he sensibly gives us a brief review of the evidence so far, and explains what we know and don't know, and urges us not to jump to quick conclusions.

The colour plates are splendid,

especially those of the sixteenth-century picture scrolls from Japan. It seems that sparrows have fared badly in western pictorial art: only two examples from classical European painting are shown here, both Italian and both showing 'Italian Sparrows' *P. hispanoliensis italiae*. My own favourite sparrow painting (which I hope Denis knows about) is also of Italian Sparrows, is small and very beautiful and is nearly 2,000 years old; it is on an interior wall at Herculaneum, just outside Naples, and was preserved when that resort was buried in mud after Vesuvius erupted in AD 79. An artist there clearly knew the birds very well.

Basically, I liked this book, but it frustrated me. Perhaps, because I like sparrows, what I'm really saying is that I wish it was two or three times as long and more comprehensive!

Mike Everett

THE SOUND APPROACH TO BIRDING: A GUIDE TO UNDERSTANDING BIRD SOUND

By Mark Constantine and The Sound Approach. The Sound Approach, Poole, 2006.

192 pages; illustrated throughout with sonograms and colour photos. Two CDs accompany the book.

ISBN 90-810933-1-2.

Hardback, £30.00.

Have you ever wondered why some Blackcaps *Sylvia atricapilla* are easy to identify on song alone, whereas others seem to sound just like

Garden Warblers *S. borin*? Or have you tried to describe the noises a bird makes for your notes, to other birders or to a rarities committee, but discovered you cannot find the words? Have you ever wondered why playback sometimes works beautifully, but sometimes fails miserably? Baffled by taxonomic decisions based on sounds? Why do vagrants often sing strangely? Still confused about crossbills *Loxia*? This is the book you have been waiting for.

The book comes with two CDs, nearly 200 tracks of bird songs and calls, and takes you through them one by one, mostly with accompanying sonograms. It starts by defining the glossary of terms –

pitch, timbre, modulation, etc. – then shows you how to 'read' a sonogram. Chapters describe how the way a bird sounds varies with the conditions of habitat, distance, etc., and again how an individual's song develops with age. The value of bird vocalisations for unravelling taxonomic relationships is covered, along with problems of dialects, culminating in a head-on treatment of the different vocal types of crossbills, and what it all might mean.

This book fills a hole in the literature for Western Palearctic birders. There is an almost evangelical tone to the book – I guess that the authors have been on a journey, and their enthusiasm to

share their findings with us bubbles out. The text is very informal, and some will find it irritating – it could have used an extra round of editing. But you cannot fault the content: for example, 'Northern' Bullfinches *Pyrrhula p. pyrrhula*, Iberian Chiffchaffs *Phylloscopus ibericus*, Sykes's Warbler *Hippolais rama*, Yellow-legged Gulls *Larus michahellis*, 'Siberian Stonechats' *Saxicola torquatus maurus*, Taiga Flycatcher *Ficedula albicilla* and (yes) those crossbills are all current identification topics that have really needed sorting out. Well, here they are, and actually much more. The strength of the

book, that it is pushing the boundaries forward for the 'average' birder, is in some ways its weakness as well. Just as some identification guides oversimplify things by using an illustration of an individual specimen as the template for the whole species, there is a danger that something similar could happen here. A single sonogram represents only a snapshot of an individual bird at one point in time, just like a picture of that bird; comparison of two sonograms from individuals of two taxa ignores variation *within* the taxa, and may lead to overconfident identifications. Still, these issues

will be sorted out in time because nothing like this book has previously existed for birders outside the 'heavy duty' literature. It is, of necessity, broad-based and superficial, but it provides the vocabulary for all birders to be able to discuss, analyse, interpret, and argue about vocalisations in the way we currently do about wing-bars and supercilia. Consequently, unless you are very confident about your abilities and expertise with bird song, you probably need to read, and interact with, this book.

Martin Collinson

ALL THE BIRDS OF BRAZIL

By Deodato Souza. Subbuteo Natural History Books, Shrewsbury, 2006. 2nd edn. 352 pages; 157 colour plates. ISBN 85-86967-04-1. Paperback, £29.95.

Souza's second edition is an improvement all round on his first, although sadly the improvements are not as great as one might have hoped for. The illustrations still let this volume down badly, being well below the standard of most other

Neotropic guides. However, while displeasing to look at, they are not so inaccurate as to prevent most identifications being made.

The text is still very brief, although succinct might be going too far. Under Sulphur-throated Spinetail *Cranioleuca sulpherifera*, for example, why has habitat, which would help enormously to find or identify that species, not been mentioned? Generally, those points covered are relevant. When the text and illustrations are used together, and with great care and preferably some knowledge, the right identifications should be

made, except perhaps in some of the most difficult species groups.

Until a complete and thorough field guide is produced for Brazil, this volume, despite its flaws, will be a huge help to anyone birding that marvellous country. A comprehensive guide would be both bulky and heavy, and I suspect that many will chose to carry this compact book with them, leaving more complete literature in the car or hotel for future reference.

Richard Schofield

THE BIRDS OF THE STATE OF KUWAIT

By George Gregory. Privately published, 2005. 219 pages; photographs and many tables. ISBN 0-9551416-0-5. Paperback, £15.00.

Bordered by Iraq, Saudi Arabia and the Persian Gulf, and covering some 18,000 km², Kuwait lies close to the eastern limit of the Western Palearctic. As a result of its geographical location at a migratory crossroads, it receives an interesting mixture of European, northern Asian and Oriental birds.

Those birders wanting to add to their Middle East list will probably choose to visit the United Arab

Emirates, which offers easier access to a wide range of sites and an attractive selection of hotels, beaches and bazaars. Kuwait, by comparison, has more restrictions on travel and access, and while those in authority are not unfriendly, they are perhaps more likely to treat with suspicion anyone wandering around with high-powered optics and camouflaged clothing!

However, if your Western Palearctic list is important, a visit to Kuwait will provide several sought-after species. Nowhere else in the region will you find Bank Myna *Acridotheres ginginianus* or Red-vented Bulbul *Pycnonotus cafer*. If those two leave you overwhelmed, Kuwait also has the only Crab-plovers *Dromas ardeola*

known to breed in the Western Palearctic, and huge colonies of Crested Terns *Sterna bergii* (although a few pairs do nest in Egypt). Also newsworthy are recent range extensions for breeding Little Crakes *Porzana parva* and White-winged Black Terns *Chlidonias leucopterus*, and where else in the Western Palearctic do you get regular wintering Pacific Golden Plovers *Pluvialis fulva*?

A number of publications and papers have referred to Kuwait, but this is the first avifauna to cover the State in detail. It is based mainly on records since 1991, since much previous data were destroyed during Gulf War hostilities. Some 37 key locations are described, with lists of typical species and a simple map. No latitude and longitude details

are given, which would have been helpful. The status of 431 species is described. The occurrence of regular migrants is illustrated on charts in which each month is split into thirds. Photographs of a

number of species, as well as habitats, are included.

This is a well-produced book that will be invaluable to anyone visiting Kuwait. Hopefully, it will stimulate more people to visit and

may act as a catalyst to ensure that the Important Bird Areas (of which Kuwait has eight) are surveyed regularly.

Keith Betton

**WHERE TO WATCH BIRDS
IN SPAIN: THE 100 BEST
SITES**

By José Antonio Montero.
Lynx Edicions, and SEO/
BirdLife, Barcelona, 2006.
341 pages; many colour
photographs and maps.
ISBN 84-96553-04-3.
Paperback, £18.50.

Any 'where to watch' book should be more up to date than any of its predecessors – and a quick check of my bookshelves revealed 11 volumes telling me where I could go and see birds in all or part of the Iberian Peninsula. So, how to approach a new one? I looked first at the sites I new best, the deltas of

the Ebro and Llobregat, and all seemed fine. I would have preferred some more detailed maps, which would eliminate some of the need for lengthy descriptive text as to where to go, but the style of writing is clear and I could certainly find my way with this information.

After a short introduction, the book is divided into 17 regions of Spain, covering between one (Murcia) and 17 (Andalusia) sites each. For what it is, this is a rather bulky book and it weighs in at some 0.75 kg! It would have been more portable if lighter paper had been used, while over 42 of the 341 pages are taken up with colour photographs; these are not strictly necessary and I would have preferred to see them replaced with

more maps.

The lengthy index is to species only, which is fair enough, but I found it far from complete. Small Button-quail *Turnix sylvaticus* is missing entirely, while the Bonelli's Eagle *Aquila fasciata* on pp. 236 & 237, the Pin-tailed Sandgrouse *Pterocles alchata* on p. 156, Capercaillie *Tetrao urogallus* on p. 216 and Blue Chaffinch *Fringilla teydea* on pp. 132 & 133 are all missing from the index; I stopped checking at that stage. However, there is no doubt that the 'where to watch' information is currently accurate and up to date. If you are planning a birding trip to Spain, you will not regret the money spent on this book.

Bob Scott

**BEST BIRDWATCHING
SITES IN NORFOLK**

By Neil Glenn. Buckingham
Press, Peterborough, 2006.
2nd edn. 256 pages, maps,
line-drawings.
ISBN 0-9550339-1-8.
Paperback, £16.95.

For visitors new to Norfolk, the introductory chapter describing the birding year gives a good idea of what to expect on a month-by-month basis. The book includes detailed maps and access information (how to get there and a suggested route around the site) for 83 sites (ten more than in the first edition), which are given in alphabetical order. The overall layout is clear and the colour scheme is easy on the eye. I particularly like the bar across the top of the page giving the

grid reference, map number and a summary of facilities, including disabled access. A banner down the side of the page lists key facts such as opening times, costs and contact information.

One of the novel features is a list of target birds at each site and the likelihood of seeing them. For most species, the percentages given are broadly accurate but for a few sites that I know well the estimates are very optimistic. For example, there is apparently an 80% chance of seeing a Wood Lark *Lullula arborea* at Barnham Cross Common although during my numerous visits (almost daily in spring) I've only ever seen one there. Similarly, for Blackborough End Tip, a 25% chance of seeing Glaucous *Larus hyperboreus* and Iceland Gull *L. glaucoideus* in winter is given – if only this were true!

I was slightly surprised to see

RSPB Lakenheath Fen included in the book, given that this site falls entirely in Suffolk. It would have been much better to include Hockwold Washes (which is in Norfolk) and mention Lakenheath Fen in the text. This may seem trivial but for bird-recording purposes this area causes a real headache! Pentney Gravel Pits is also wrongly named; the site described in the book is actually Nar Valley Fisheries, and what local birdwatchers call Pentney Gravel Pits is termed Caravan Site Lakes.

Overall, this is a well-presented and easy-to-read guide covering the best sites in Norfolk for birdwatching. It will prove useful for those visiting Norfolk for the first time and will hopefully encourage regular visitors to explore new sites.

Dawn Balmer

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Egg-collector ASBO refused

A bold move by the Crown Prosecution Service to extend AntiSocial Behaviour Orders (ASBOs) to wildlife crime was rebuffed by magistrates in Northumberland last month. However, the magistrates in Bedlington did accept that wildlife crime was antisocial and this may pave the way for similar ASBO applications in future.

The CPS chose egg-collector Wayne Derbyshire as their test case. In June this year he was convicted of the theft and possession of 900 wild-bird eggs, including those of Stone-curlew *Burhinus oedinenus*, Little Ringed Plover *Charadrius dubius* and Little Tern *Sternula albifrons*. In an attempt to curtail Mr Derbyshire's movements during the 2007 breeding season, the CPS and Northumbria Police applied for an ASBO with wide-ranging conditions. Between 15th February and 30th June they sought to have

him banned from all nature reserves, bird sanctuaries, RSPB reserves and National Parks in England and Wales – and specifically the internationally important Northumbrian seabird reserves of Coquet Island and the Farne Islands. In addition, they sought a ban on his movement across the border into Scotland, where some of his egg-collecting had taken place. He would also have been placed under curfew between 20.00 and 07.00 hrs throughout the period.

For the requirements of a criminal ASBO to be fulfilled, magistrates have to be satisfied that the actions of the defendant have caused harassment, alarm or distress. So can a crime committed against wildlife also have an impact on people? The solicitor defending Wayne Derbyshire was unconvinced and described the CPS

application as 'an imaginative use of the legislation'. And he questioned how the proposed ASBO would protect people. The prosecution countered that the actions of egg-collectors and other wildlife criminals, for example Badger *Meles meles* baiters, do affect people and that, for example, the one million members of the RSPB would be affronted by such behaviour.

The magistrates declined to make an example of Mr Derbyshire, although they accepted that his behaviour was antisocial. Afterwards Mr Derbyshire promised: 'My egg-collecting days are over.' On behalf of Northumbria Police, PC Andy Swinburne said: 'The court took this application very seriously. It's notable that the magistrates found that egg stealing is classed as antisocial behaviour.'

Cirl Buntings reintroduced to Cornwall

In the first reintroduction of its kind in Europe, more than 70 Cirl Buntings *Emberiza cirlus* have been released in south Cornwall in a collaborative project by the RSPB, Paignton Zoo, Natural England and the National Trust. Although previous schemes have reintroduced birds of prey such as Red Kites *Milvus milvus* and White-tailed Eagles *Haliaeetus albicilla*, and attempted to re-establish Corn Crakes *Crex crex* in England, this is the first reintroduction of a passerine species.

The RSPB's Director of Conservation, Dr Mark Avery, said: 'We're delighted that this ambitious project has got off to such a good start. It's fingers crossed now that these birds survive the winter and settle down well in their new home... This project really is about

putting wildlife back in the landscape and redressing some of the losses that have happened in our lifetimes. If we succeed – and things are looking good – then it sends a very positive message that farmers and conservationists can create a countryside which is richer in wildlife.'

Following the success of a trial of the reintroduction technique in 2004, Cirl Bunting chicks were collected under licence from a number of sites in south Devon this summer and then hand-reared by aviculturists from Paignton Zoo before being released back into the wild. Paignton Zoo's curator of birds, Colin Bath said: 'We're really proud of the way our two aviculturists have excelled themselves during this first summer of the project. It's great that we found not

just one but two keepers who possess boundless patience and all-important nimble fingers, essential for rearing tiny chicks.'

The Cirl Bunting was once a common bird in Britain, found all along the south coast of England and even into North Wales, but changes in farming practices and loss of suitable habitat to development led to its decline and saw its range restricted to a small area of south Devon. In 1989, only 118 pairs of the bird remained, but since 1993 the RSPB has worked with farmers, landowners and partner organisations to ensure that Cirl Buntings have suitable areas for feeding and nesting. As a result, the population has increased to more than 700 pairs.

RSPB conservation officer Chris Townend has been managing

the reintroduction project. He said: 'Cirl Buntings are stunning birds to look at but are rather lazy, never moving more than about a mile from their birthplace. Their numbers may have increased but until now they were concentrated in one small area, so if anything happened to that population it would mean the end of Cirl

Buntings in Britain. This is why they need a helping hand to secure their future here.'

The location in Cornwall was chosen for the release because it met the criteria set during a survey of potential reintroduction areas. It used to have Cirl Buntings until a few decades ago, has suitable habitat and a temperate climate

(Cirl Buntings are vulnerable to prolonged cold weather and snow-fall). The area chosen was also considered more likely to be able to support the greatest number of pairs compared with other sites. The reintroduction project will run for the next three years, to enable the release of enough birds to create a sustainable population.

Milliband calms the Eider down

Environment Secretary David Milliband has backed English Nature's decision to stop fishermen using electronic wailers to scare off Common Eiders *Somateria mollissima* from commercial mussel beds in The Wash.

The decision comes after a four-day public inquiry in June (see *Brit. Birds* 99: 442) which heard that, since the collapse of wild mussel and cockle stocks in the 1990s following heavy over-fishing, the industry has turned increasingly towards intensive mussel cultivation on lays. Fishermen are sustaining commercially damaging losses from the artificial

mussel beds and have asked for permission to use bird scarers to disturb Eiders which are feeding on the mussels.

The Secretary of State has accepted the Inspector's recommendation and conclusions, in particular noting that disturbance from the wailers could effectively reduce the feeding and roosting areas for Eiders and other waterbirds; and also that displacement of birds from the vicinity of the lays could have a negative impact on the extent of natural intertidal mussel and cockle beds, and on the abundance and composition of the characterising species, such as

mussels. Furthermore, the trial undertaken to assess the effectiveness of non-lethal bird scarers concluded that wailers were of only limited effectiveness and that further research would be necessary to confirm the findings of the trial. A further study would also be required to assess the effects on species other than Common Eider.

The Wash is the most important bird site in Britain, supporting 400,000 shorebirds and wildfowl. It also supports 10% of Britain's Harbour Seal *Phoca vitulina* population. It is an internationally important nature conservation site and is designated as a Site of Special Scientific Interest, a Special Protection Area, a Special Area of Conservation and a Ramsar site.

Dr Andy Brown of Natural England said: 'Work will need to continue with the fishing industry and Eastern Sea Fisheries Joint Committee to try to establish why some of the lays are more susceptible to significant loss of mussel and other lays remain relatively unaffected. We think that the trend around Roger and Toft Sands towards bigger lays, closely packed together, with higher stocking rates may be too tempting for the birds to ignore. There may also be other factors involved, such as location of lays in unsuitable areas where they are exposed to damage by wave action or tidal currents, or they may be stocked too densely, again making them vulnerable to damage by natural physical processes. Finding the right balance could bring the problem under control in the future without the need to scare birds.'



316. Common Eiders *Somateria mollissima* having a wash.

Trawling for Balearics

The RSPB is launching the first survey in UK waters of one of the most threatened seabirds in the world. The Balearic Shearwater *Puffinus mauretanicus* is the rarest bird in the world to visit Britain regularly.

There are thought to be fewer than 2,000 pairs of this Critically Endangered seabird in the world, and experts believe that they could be visiting British waters in increasingly larger numbers – with hundreds of birds being involved – in late summer and early autumn, possibly as a result of climate change.

Globally, Balearic Shearwater nests only on five islands in the western Mediterranean, including the holiday hotspots of Majorca and Ibiza, where the bird faces threats from introduced cats *Felis silvestris catus* and rats *Rattus* spp., and from increasing tourist development. Additionally, like albatrosses (Diomedidae), Balearic Shearwaters are regularly drowned on longline fishing hooks, espe-

cially deep-water lines set for hake.

Carles Carboneras, a seabird expert with SEO – the RSPB's partner in Spain – has studied Balearic Shearwaters for many years. He said: 'Many believe that because the Balearic Shearwater nests in the Mediterranean it must love warmth. However, it prefers to leave the Mediterranean in mid summer and head north through the Bay of Biscay towards relatively cool British waters. It is a specialist of cold water and the bird can no longer live where it used to. But with climate change warming the oceans, these seas will become less productive, and we believe that these birds will probably need to move even further north to find sufficient food.'

Dr Mark Avery, the RSPB's conservation director, said: 'The Balearic Shearwater is one of the rarest birds in the world. Britain's seas contain more animal species under threat of global extinction than our countryside does. The marine environment is the Cin-

derella of the conservation movement and the growing global importance of our waters is a call for urgent action by the Government and the European Union to protect our seas.'

The pilot study, involving synchronised counts at different locations, will hopefully provide a fuller picture of the life of the Balearic Shearwater. Dr Russell Wynn, of the National Oceanography Centre (NOC), Southampton, is also studying the birds and will be involved with the new survey. He said: 'Balearic Shearwaters are venturing north in increasing numbers, even though the species is declining and may become extinct within our lifetime. I'm collaborating with oceanographers and biologists at NOC to understand why they are moving north, and am working with the RSPB to expand the pilot survey next year.' A paper on Balearic Shearwaters by Russell Wynn is currently in press and will appear in *BB* early next year.

Campaigners propose roadblock for Via Baltica

Proposed road construction in Poland threatens to destroy valuable wildlife and habitats protected under European law. The developments form part of the Helsinki to Warsaw international transport corridor called 'Via Baltica'.

More than 150,000 people in Poland have already signed a petition against the road being built, but now campaigners are calling for more people to express their concern through an e-petition.

OTOP, the Polish partner of BirdLife International, WWF Poland and the CEE Bankwatch Network are asking the Polish Government to stop work immediately on four projects and await the results of a Strategic Environmental Assessment. 'We understand the need for upgrading the road system, but we object to these decisions being taken without proper environmental evaluation. There are some very precious areas

at risk, and a full appraisal should identify a less damaging route for Via Baltica,' said Malgorzata Znaniecka, OTO's Important Bird Area (IBA) Officer. 'The Polish Government is getting a reputation for disregarding European law and its own natural heritage. We ask people everywhere to sign the e-petition and speak out in favour of Europe's priceless green areas.'

The current road-development proposals cut through Augustow and Knyszyn Primeval Forests, the Biebrza Marshes National Park and skirt Narew River National Park. All four are recognised as IBAs by BirdLife and are Special Protection Areas under the Birds Directive and proposed as Sites of Community Interest under the Habitats Directive – Europe's strongest laws for the protection of natural environments.

The sites host a magnificent array of threatened wildlife,

including Wolf *Canis lupus*, Lynx *Felis lynx* and Lesser Spotted *Aquila pomarina* and White-tailed Eagles. The Biebrza Marshes is the most important breeding site in Europe for two globally threatened bird species: Aquatic Warbler *Acrocephalus paludicola* and Spotted Eagle *Aquila clanga*.

'Developing roadways through the centre of this pristine environment is nothing short of a crime,' said Anna Roggenbuck, Polish National Co-ordinator of CEE Bankwatch Network. 'The Polish Government has said that it intends to begin work on the Augustow city bypass by the end of 2006, which will begin with the logging of primeval forest for access roads. Construction sites will cause habitat loss and fragmentation, as well as the obvious impacts of noise, water and air pollution, and the heightened risk of future road collisions with animals. If the Strategic Envir-

omental Assessment results are soon going to show the best alternative route, why not wait?

The Web petition is posted at www.viabalticainfo.org/en/petition and the signatures will be pre-

sented to the Polish Government on 16th November.

New species 'too rare for type specimen'

A professional astronomer has discovered the first species new to science in India for more than half a century. Whilst birdwatching at Eaglenest Wildlife Sanctuary, Arunachal Pradesh, in January 1995, Ramana Athreya glimpsed two liocichlas (a kind of Asian babbler) which did not fit any field-guide descriptions. Ten years passed before he saw the birds again. A colleague identified them – from Athreya's field sketch – as Emei Shan Liocichla *Liocichla omeiensis*. But Emei Shan Liocichla is endemic to mountains in south-west China. The nearest record was over 1,000 km from Eaglenest.

With Forest Department permits, Athreya mist-netted one bird in May 2006. After taking detailed notes and photographs – and some sample feathers – he released it. Similarities suggested that it was closely related to Emei Shan Liocichla, but many differences in plumage and calls, and especially song, indicated a new species. Athreya's bird is about 10% larger in all measurements except

the bill, which is smaller.

Since such a spectacularly colourful bird (with equally distinctive calls) had been overlooked during several years of surveys at Eaglenest, Athreya felt that the population might be too small to withstand the loss of an adult bird. Instead, feathers from the mist-net have been designated the holotype. Most sightings have taken place in community forest belonging to the Bugun tribe, so Athreya has proposed the name Bugun Liocichla *Liocichla bugunorum*. The formal description appears in *Indian Birds* (www.indianbirds.in) where a pdf copy of the paper can be downloaded.

Athreya's observations account for a total of 14 individuals, but he thinks that the species may eventually be discovered in adjacent Bhutan and elsewhere in Arunachal Pradesh. All sightings except one have been on hillsides over 2,000 m, among dense scrub and small trees remaining after logging. 'Clearly the species can exist in disturbed areas and utilise

different vegetation,' Athreya says. 'This is more or less identical to the habitat preference of Emei Shan Liocichla.' This versatility is at odds with the small, highly local populations. There are plans to build a highway through Eaglenest, passing through Lama Camp where most sightings have taken place. 'The birds survive but clearly they don't thrive. A busy highway could well push this spectacular bird into local extirpation, which could also be extinction.'

Dr Asad Rahmani, Director of BNHS (the BirdLife Partner in India), commented: 'This discovery again proves the importance and need for extensive research and exploration in northeast India. We must also see that the species' habitat is adequately protected.' The prospect of income from ecotourism provides a major incentive to protect Eaglenest. Athreya, in partnership with Indi Glow of the Bugun tribe, is developing an ecotourism project to benefit the local community.

Italians gunning for Song Thrushes

With all the attention focused on the Maltese migrant massacre, it is easy to forget that hunting continues unabated elsewhere in southern Europe. The Italian hunting season opened on 17th September. The 70,000 hunters are permitted to hunt 40 different bird species until the end of the season on 31st January 2007. These include Sky Lark *Alauda arvensis*, Ruff *Philomachus pugnax*, Water Rail *Rallus aquaticus* and Jack Snipe *Lymnocyrtus minimus*. The annual bag of the officially huntable species is about 17 million birds, the most sought-after being the Song Thrush *Turdus philomelos*, with 7.7 million birds shot. In addition, an estimated 10–20 million birds are shot illegally. However, conservationists had one small success to their credit before the season began. Several regions had applied to have the season extended, to start on 2nd September, but an Italian organisation secured a court injunction against a local administrative court decision to begin the season early.

Bird trapper jailed

Meanwhile, the abhorrent practice of 'liming' continues in Britain. A man who trapped wild birds in this way was jailed for four months, while his partner in crime was sentenced to 70 hours community service.

In October 2005, RSPCA inspectors and police officers found two Goldfinches *Carduelis carduelis* and a Bullfinch *Pyrrhula pyrrhula* in cages hidden in a bedroom cupboard at the home shared by John and Christopher Dugdale. In addition, lime-sticks – twigs prepared with a glue – were found in an airing cupboard. The tips of dwarf conifers in their garden had also been prepared with glue in an attempt to trap birds.

John Dugdale of Spennymoor, Co. Durham, was sentenced to four months in prison at Newton Aycliffe Magistrates Court. He had previously pleaded guilty to six charges, including possession of a wild Bullfinch and a wild Goldfinch contrary to the Wildlife and Countryside Act 1981. Magistrates said they had no choice other than to give him a custodial sentence because he had previous convictions for trapping wild birds. At the same hearing, Christopher Dugdale was

sentenced to 70 hours community service and was ordered to pay £175 in costs. He had previously pleaded guilty to five charges, including possession of a wild Goldfinch.

The birds seized by the officers were released back into the wild. RSPCA inspector Gary Palmer said: 'The sentence reflects the seriousness of this case. Trapping wild

birds is totally unnecessary as there's a legitimate trade in captive-bred birds. Trapping wild birds is especially cruel because of the suffering it causes. Many birds die of shock because of the way they're caught – by spreading sticky glue on shrubs where the birds rest. If they survive being caught, they can suffer great distress trying to escape and hurt themselves flying into the bars of

the cages they are kept in.' Inspector Cliff Harrison of the RSPCA's Special Operations Unit said: 'Bird trapping and dealing in wild birds for profit is rife throughout the country. A lot of money is made on the back of wild birds being forced to suffer. We appeal to members of the public to keep their eyes open for bird trappers and report them to the RSPCA.'

Another bird-tour company goes carbon neutral

Following the initiative of Bird Holidays to offset all of their clients' carbon dioxide emissions from air travel for 20 years by planting forest in Ecuador (*Brit. Birds* 99: 444–445), another bird-tour company has picked up this environmentally responsible baton.

Honeyguide Wildlife Holidays (www.honeyguide.co.uk) is introducing carbon offset for its holidays from 2007. Its brochure states: Every Honeyguider will be aware of global warming and the threat this poses to us and to wildlife. We have to do our bit to tackle this. To that end, every Honeyguide holiday now includes a sum going to 'carbon offset' projects – saving an equivalent amount of carbon to that we create from our flights. This will go through Carbon Clear (www.carbon-clear.com). Yes, there is a cost, on average £4.00 for every holiday in Europe and £26.00 for our South Africa holiday. This will be included in the holiday price. This is a small step in tackling such a big problem, but we hope by establishing this principle that other holiday businesses will follow.'

Honeyguide already makes conservation contributions from the £25.00 levy charged to clients on top of the price of their holidays. These go to a local conservation project in the country of the holiday. The total conservation contributions through Honeyguide since 1991 stood at £42,235 (roughly €59,100) at the end of summer 2006.

Honeyguide founder Chris Durdin told N&C: 'An observation I'd make is that it's easier to make carbon offsets in the developing world than closer to home. This is a developing area of work. No doubt you get more carbon offsets for your money out of Europe, be it by tree planting, supporting carbon-saving technology or other innovations. We have a programme of holidays almost entirely in Europe, and it would be very welcome for us if there were projects somewhere closer to home, preferably somewhere we take one of our holidays. Maybe these things will develop over the coming months.'

Baby Balmer begins her birding

A belated birth announcement – and congratulations – for Dawn Balmer of our Editorial Board and her husband Pete Wilson. Their first child, Bethany Grace, was born on 2nd September weighing 5lb 9oz. Apparently, Bethany twitched the Winterton Pallid Harrier *Circus macrourus* when she was just three weeks old. Or rather she was awake and looking in the right direction, so Dawn tells me, which is better than some adult twitchers can manage.

OBC Cambridge meeting

The Oriental Bird Club is holding its annual meeting on 11th November in the Wilkinson Room, St John the Evangelist, Hills Road, Cambridge CB2 2RN. The programme includes talks entitled: Qinghai captured on video; The conservation status of Asia's pheasants and partridges; In search of the Western Tragopan in Pakistan's Palas Valley; and The Sumatra birding circuit. OBC sales goods and refreshments will be on offer during the day. Doors open at 10.45 and the meeting closes at 17.00 hrs.

Request

Sightings of colour-ringed European Rollers

As part of an investigation into the population ecology of European Rollers *Coracias garrulus* in southern Austria, 146 birds have been marked since 2003. All birds carry a metal ring and one or two colour rings on the other leg. Since

2006, marked birds carry an additional colour ring below the metal ring. Sightings outside the study area are of particular interest and will be fully acknowledged. Resightings of birds from other schemes in eastern Europe will

be passed on to the relevant organisation. Please send details of sightings to: Peter Sackl, Steiermärkisches Landesmuseum Joanneum, Raubergasse 10, 8010 Graz, Austria; e-mail peter.sackl@museum-joanneum.at

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mid September to mid October 2006.

Marbled Duck *Marmaronetta angustirostris* Stanpit Marsh (Dorset), 23rd September to 9th October; Rye Harbour (East Sussex), 25th–26th September; both of unknown origin. **Ferruginous Duck** *Aythya nyroca* Chasewater (Staffordshire), 16th September; Chew Valley Lake (Somerset), two, 17th September, with one to 30th September. **Lesser Scaup** *Aythya affinis* Pine Lake area (Lancashire), 14th September to 8th October. **King Eider** *Somateria spectabilis* Blackdog (Northeast Scotland), 21st September to 9th October; Burra (Shetland), 6th October. **Black Scoter** *Melanitta americana* Llanfairfechan (Conwy), returning individual, from 24th September.

Zino's/Fea's Petrel *Pterodroma madeira/feae* Galley Head (Co. Cork), 11th September. **Great Shearwater** *Puffinus gravis* 116 past Annagh Head (Co. Mayo), 19th September, and 134 on 28th September. **Wilson's Storm-petrel** *Oceanites oceanicus* Brandon Point (Co. Kerry), 6th September.

Cattle Egret *Bubulcus ibis* Stanpit Marsh, 9th October; Blakeney (Norfolk), 9th October. **Great White Egret** *Ardea alba* Humberston,

13th–21st September; Donna Nook (both Lincolnshire), 30th September. **Purple Heron** *Ardea purpurea* Meare Heath (Somerset), 23rd September; Lough O'Donnell (Co. Clare), 1st–3rd October. **Glossy Ibis** *Plegadis falcinellus* Swadlincote (Derbyshire), 17th–18th September, presumed same Burton on Trent (Staffordshire), 18th; Martin Mere, 29th September and 3rd October, and Brockholes Quarry (both Lancashire), 1st–2nd October.

Pallid Harrier *Circus macrourus* Winterton/Hemsby area (Norfolk), 23rd September to 7th October. **Red-footed Falcon** *Falco vespertinus* Glencolmille (Co. Donegal), 25th September. **Eleanora's Falcon** *Falco eleonorae* Tresco, 12th September, and possibly St Mary's (both Scilly), 14th–15th and 18th September.

Black-winged Stilt *Himantopus himantopus* Tacumshin and Lady's Island (Co. Wexford), 22nd–23rd September; Coedbach Marsh (Carmarthenshire), 24th–26th September. **Kentish Plover** *Charadrius alexandrinus* Pagham Harbour (West Sussex), 14th September; Severn Beach (Somerset), 22nd September. **American Golden Plover** *Pluvialis dominica* Pagham Harbour, 15th September; Tacumshin, 17th–24th September; Ballycotton (Co. Cork), 18th–19th September; Ferriter's Cove (Co.

Kerry), 19th September; South Uist (Western Isles), 26th–28th September; Smerwick Harbour (Co. Kerry), 28th September; St Mary's, 29th September; Ballyconneely (Co. Galway), 29th–30th September; Rosslare (Co. Wexford), 29th September; Ashton's Callows (Co. Tipperary), 30th September; Old Head of Kinsale (Co. Cork), 30th September; Fetlar (Shetland),



317. Marbled Duck *Marmaronetta angustirostris*, Stanpit Marsh, Dorset, October 2006.

1st–2nd October; Whitburn (Northumberland), 1st October; Whalsay (Shetland), 2nd–4th October; Castlemaine Harbour (Co. Kerry), 2nd October; Carrahane (Co. Kerry), 2nd October; East Ferry (Lincolnshire), 3rd October; Tresco, 3rd–6th October; Snettisham (Norfolk), 3rd October; Keyhaven Marshes (Hampshire), 4th–9th October; Myroe Levels (Co. Derry), 4th–8th October; Lewis (Western Isles), long-stayer to 1st October.



Richard Chandler

Semipalmated Sandpiper
Calidris pusilla

Blennerville (Co. Kerry), 5th September; Blackrock Strand (Co. Kerry), 6th September; Ferriter's Cove, 11th September; Smerwick Harbour, 6th–14th September, one to 16th, and a third on 25th September; Lissagriffin (Co. Cork), 6th–10th September; Rosslare, 8th–29th September; South Uist, 15th September; Slimbridge (Gloucestershire), 22nd–24th September; The

318. Juvenile Least Sandpiper *Calidris minutilla*, Hayle Estuary, Cornwall, September 2006.

Cull (Co. Wexford), 22nd September; Cunnigar (Co. Waterford), 23rd September; Keyhaven/Pennington Marshes (Hampshire), long-stayer to 18th September. Least Sandpiper *Calidris minutilla* Hayle Estuary (Cornwall), 17th–24th September. White-rumped Sandpiper *Calidris fuscicollis* Trabeag (Co. Kerry), 5th September; Shannon Airport Lagoons (Co.



Robin Chittenden

319. Juvenile White-rumped Sandpiper *Calidris fuscicollis*, Salthouse, Norfolk, October 2006.



320. Juvenile Baird's Sandpiper *Calidris bairdii*, Tacumshin, Co. Wexford, September 2006.

Clare), 6th September; Ballycotton, 7th–13th September and 6th–7th October; Ventry (Co. Kerry), 7th September; Blennerville, 8th September; Carrahane, 9th September; Tacumshin, 16th–18th September; Titchwell (Norfolk), 7th October; Fair Isle (Shetland), 7th–9th October; Dungeness (Kent), 8th October; Freiston (Lincolnshire), 8th–9th October; John Muir CP (Lothian), 8th–9th October; Cley (Norfolk), 9th October. Baird's Sandpiper *Calidris bairdii* Ferriter's Cove, 7th–11th September; Casheen Estuary (Co. Kerry), 10th September; Inch Strand (Co. Kerry), 11th September; Annagh Strand (Co. Mayo), 12th September;

Western Isles, three on Scilly and two each in Cornwall, Shetland and Northeast Scotland. New birds arrived regularly throughout the period, but peak dates were 14th and 17th September with four apiece. This species was widely reported in Ireland, including a flock of eight together at Tacumshin on both 12th September and 7th October. Great Snipe *Gallinago media* Unst (Shetland), 11th–12th September. Long-billed Dowitcher *Limnodromus scolopaceus* Upper Bittell Reservoir (Worcestershire), 25th September to 3rd October; Lough Beg (Co. Cork) 30th September to 1st October; Oare Marshes (Kent), 2nd–8th October; Tamar Lakes



321. Juvenile Pectoral Sandpiper *Calidris melanotos*, Grafham Water, Cambridgeshire, September 2006.

Tacumshin, 14th–26th September; Cross Lough (Co. Mayo), 18th–24th September; St John's Lake (Cornwall), 20th September; Trabeag, 25th September; Hayle Estuary, long-stayer to 14th September.

Buff-breasted Sandpiper *Tryngites subruficollis* In Britain, at least 24 from 13th September to 1st October, including up to six in the

(Devon), 8th October; Shannon Airport Lagoons, long-stayer to at least 17th September; Gibraltar Point (Lincolnshire), long-stayer to 1st October. Upland Sandpiper *Bartramia longicauda* Unst, 6th–7th October. Lesser Yellowlegs *Tringa flavipes* Lisagragiffin (Co. Cork), 6th–10th September; Dundrum Bay (Co. Down), 6th–24th September; Loch of Strathbeg, 15th–16th

September, presumed same Meikle Loch (both Northeast Scotland), 17th September to 3rd October; Lough Beg (Co. Cork), 20th September to 1st October; Rosslare, 21st September; Belderra (Co. Mayo), 27th September; Clogheen Marsh (Co. Cork), 1st October; Cross Lough, 1st–8th October; Bleadon Level (Somerset), 7th–9th October; Gibraltar Point, long-stayer to 23rd September. **Spotted Sandpiper** *Actitis macularius* Nethertown (Co. Wexford), 5th–18th September; Sutton Bingham Reservoir (Somerset), 18th September; Kilbaha (Co. Clare), 7th October; Hayle Estuary, 7th–9th October; Tamar Lakes, 9th October. **Wilson's Phalarope** *Phalaropus tricolor* Bann Estuary (Co. Derry), 11th September; Walmsley Sanctuary, 14th–16th September, presumed same Stithian's Reservoir (both Cornwall), 17th–25th September; Ross Bay (Co. Clare), 23rd September; Annagh Marsh, 1st October.

Laughing Gull *Larus atricilla* Hillfield Park Reservoir (Hertfordshire), 19th–20th September; Brora (Highland), 9th October. **Bona-parte's Gull** *Larus philadelphia* Lisvane Reservoir (Glamorgan), 12th September; Inch



Iain Leach

322. Juvenile Buff-breasted Sandpiper *Tryngites subruficollis*, Donna Nook, Lincolnshire, September 2006.

Strand, 13th September to 3rd October; Killinshannig (Co. Kerry), 20th–23rd September; Newbiggin (Northumberland), long-stayer to 9th October. **White-winged Black Tern** *Chlidonias leucopterus* Long Eaton Gravel-pits (Derbyshire), 13th September; Lee Valley Park (Essex), 14th September; Whittle Dene Reservoir (Northumberland), 19th–25th September; William Girling Reservoir (London/Essex), 23rd September; Newbiggin, 27th September.



Richard Chandler

323. First-winter Wilson's Phalarope *Phalaropus tricolor*, Stithian's Reservoir, Cornwall, September 2006.

Michael McKee



324. Olive-backed Pipit *Anthus hodgsoni*, Out Skerries, Shetland, September 2006.

Paul Baxter



325. Pechora Pipit *Anthus gustavi*, Fair Isle, Shetland, September 2006.

Hugh Harrop



326. Citrine Wagtail *Motacilla citreola*, Scatness, Shetland, September 2006.

Forster's Tern *Sterna forsteri*
Cruisetown Strand (Co. Louth), 8th October.

Eurasian Scops Owl *Otus scops* Holme (Norfolk), 12th September. Snowy Owl *Bubo scandiacus* Mullet Peninsula (Co. Mayo), 9th September to 8th October. Alpine Swift *Apus melba* Ipswich (Suffolk), 4th–5th October. Pallid Swift *Apus pallidus* Portland (Dorset), 23rd September. European Roller *Coracias garrulus* Holy Island, Goswick and Beal (Northumberland), 8th–9th October. Red-rumped Swallow *Cecropis daurica* Beeston Bump (Norfolk), 28th September; Hoswick (Shetland), long-stayer to 9th October.

Tawny Pipit *Anthus campestris* Lizard (Cornwall), 13th September; Blakeney Point, 14th September; Tacumshin, 19th–29th September; Portland, 24th September; Wells (Norfolk), 24th September; Treen (Cornwall), 25th September; near Cemlyn Lagoon (Anglesey), two, 25th September with one to 26th; St Mary's, 28th September to 1st October. Olive-backed Pipit *Anthus hodgsoni* Fair Isle, 18th and 22nd September; Out Skerries (Shetland), 27th–28th September; South Uist, 5th October; Foula, two, 6th October; Kergord (Shetland), 9th October. Pechora Pipit *Anthus gustavi* Fair Isle, 15th–23rd September; Fetlar, 18th September; Flamborough Head (East Yorkshire), 24th September. Red-throated Pipit *Anthus cervinus* Fair Isle, 18th September; St Mary's, 28th September. Citrine Wagtail

Motacilla citreola Ballycotton, 13th September; Out Skerries, 15th–16th and 24th September; Tacumshin, 16th–17th September; Scatness (Shetland), 23rd September; Derrymore (Co. Kerry); 25th–26th September.

Thrush Nightingale *Luscinia luscinia* Lerwick (Shetland), 29th–30th September. Isabelline Wheatear *Oenanthe isabellina* Carmel Head (Anglesey), 22nd–24th September. 'Black-throated Thrush' *Turdus ruficollis atrogularis* Foula, 7th–8th October.

Pallas's Grasshopper Warbler *Locustella certhiola* Whalsay, 2nd October. Lanceolated Warbler *Locustella lanceolata* Fair Isle, two, 15th September; Foula (Shetland), 5th–7th October. River Warbler *Locustella fluviatilis* Foula, 3rd–4th October. Aquatic Warbler *Acrocephalus paludicola* Titchfield Haven (Hampshire), 12th September; Fair Isle, 16th–21st September. Blyth's Reed Warbler *Acrocephalus dumetorum* Gibraltar Point, 16th September; Auchmithie (Angus), 16th–18th September; Skateraw (Lothian), 17th September; North Ronaldsay (Orkney), 23rd–30th September. Eastern Olivaceous Warbler *Hippolais pallida*



Kit Day

327. Isabelline Wheatear *Oenanthe isabellina*, Carmel Head, Anglesey, September 2006.

Cape Clear (Co. Cork), 24th September to 1st October. Booted Warbler *Hippolais caligata* Fetlar, 18th–22nd September.

Subalpine Warbler *Sylvia cantillans* St Agnes (Scilly), 26th September to 1st October; Bryher



Paul Baxter

328. Lanceolated Warbler *Locustella lanceolata*, Fair Isle, Shetland, September 2006.

Deryk Shaw



329. Aquatic Warbler *Acrocephalus paludicola*, Fair Isle, Shetland, September 2006.

(Scilly), long-stayer to 15th September. Sardinian Warbler *Sylvia melanocephala* Winterton, 8th October. Greenish Warbler *Phylloscopus trochiloides* Brownstown Head (Co. Waterford), 3rd–5th September; Cape Clear 14th–19th September; Noss (Shetland), 17th September; Whitburn (Co. Durham), 24th–25th September; Valentia Island (Co. Kerry), 7th–8th October. Arctic Warbler *Phylloscopus borealis* St Agnes, 18th–19th September; Geosetter (Shetland), 21st–30th September; St Mary's, 23rd September; Boddam (Shetland), 9th October. Western Bonelli's Warbler *Phylloscopus bonelli* St Agnes, 22nd–25th September; Mire Loch (Borders), 25th–26th September; St Mary's, 26th September to 9th October. Western/Eastern Bonelli's Warbler *Phylloscopus bonelli/orientalis* Tresco, 12th–13th September; Bardsey (Gwynedd), 24th September.

Isabelline Shrike *Lanius*

Stef McElwee



330. Blyth's Reed Warbler *Acrocephalus dumetorum*, Skateraw, Lothian, September 2006.

isabellinus Lewis, 22nd–29th September, same Barra (Western Isles), 30th September to 1st October; Eday (Orkney), 30th September and 3rd October; undisclosed site in Northumberland, 4th October.

Woodchat Shrike *Lanius senator* Lundy (Devon), 12th and 26th September; St Mary's, 13th–25th September; Unst, 23rd–26th September; Hook Head (Co. Wexford), 23rd September to 1st October; Mizen Head (Co. Cork), 24th–25th September; Great Orme Head (Conwy), 30th September to 5th October; Fair Isle, long-stayer to 13th September.

Rose-coloured Starling *Sturnus roseus* Cape Clear 13th September to 4th October, with two on 18th September; Winterton, 22nd–24th September; Bryher, 23rd–28th September and 4th–5th October; Benacre/Kessingland (Suffolk), 23rd–27th September; Portland/Southwell (Dorset), 24th September to 6th October; Ballycotton, 24th September; Lewis, 1st October; Kirkland (Cumbria), 1st October; Fetlar, 1st October; Conwy RSPB (Conwy), 6th October.

Red-eyed Vireo *Vireo olivaceus* Nanquidno (Cornwall), 2nd–4th October; Tarmon (Co. Mayo), 5th–7th October; Kilbaha, 7th–9th October. **Arctic Redpoll** *Carduelis hornemanni* Foula, 4th–5th October. **Canada Warbler** *Wilsonia canadensis* Kilbaha, 8th–9th October. **Rustic Bunting** *Emberiza rustica* Foula, 27th–29th September, two 30th September to 1st October, one



Hugh Harrop

331. Arctic Warbler *Phylloscopus borealis*, Geosetter, Shetland, September 2006.



Martin Scott

332. First-winter Isabelline Shrike *Lanius isabellinus*, Lewis, Western Isles, October 2006.



Kit Day

333. Juvenile Rose-coloured Starling *Sturnus roseus*, Winterton, Norfolk, September 2006.

Russell Wynn



334. Arctic Redpoll *Carduelis hornemanni*, Foula, Shetland, October 2006.

to 2nd October; Fair Isle, 3rd–5th October; Unst, 4th–6th October. Little Bunting *Emberiza pusilla* Dale of Walls (Shetland), 26th September; Out Skerries, 1st October; Foula, 3rd October; Unst, 5th October. Yellow-breasted Bunting *Emberiza aureola* Whalsay, 11th September; Fair Isle, 15th–16th September. Black-headed Bunting *Emberiza melanocephala* Toab (Shetland), 16th –22nd September; Fetlar, 21st–28th September.

Hugh Harrop



335. Yellow-breasted Bunting *Emberiza aureola*, Whalsay, Shetland, September 2006.



336. First-winter Black-headed Bunting *Emberiza melanocephala*, Toab, Shetland, September 2006.

Hugh Harrop

STOP PRESS

We are sad to report the news that Mike Rogers died, in hospital, on 10th October. A funeral and a memorial service were held at Towednack church, in Cornwall, on 20th October. Mike took on the role of Honorary Secretary of BBRC in 1978 and had a hugely significant impact on organisation of the Committee in the years that followed. He was a true gentleman and will be sorely missed. A full obituary will appear in due course. *Eds*

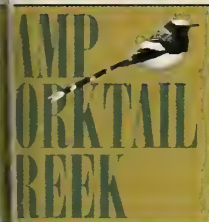
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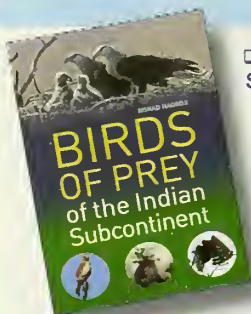
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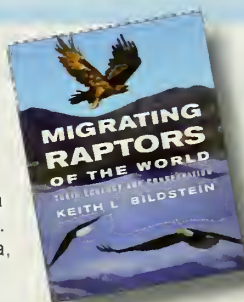


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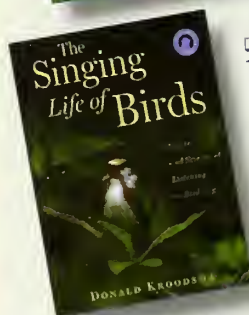
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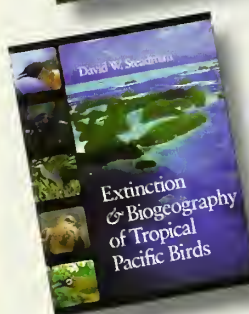
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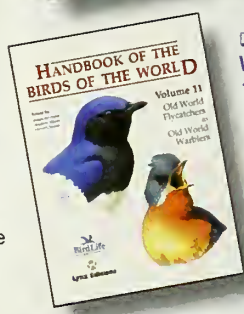
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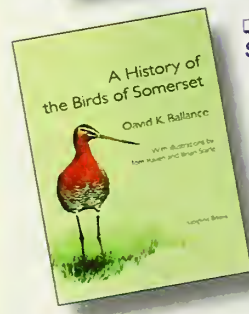


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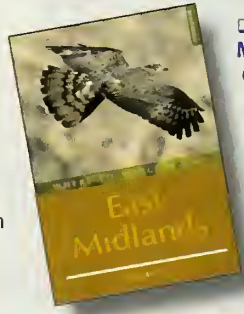
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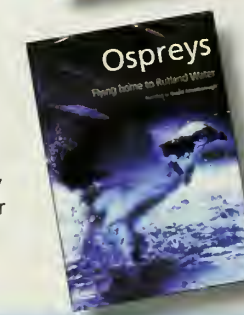
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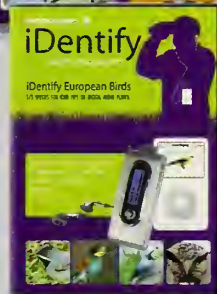
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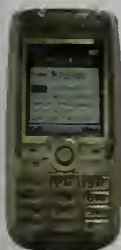
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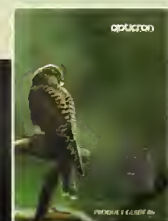
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The boundaries of the Palearctic region

Kees (C. S.) Roselaar

ABSTRACT Although the western and eastern boundaries of the Palearctic region are widely agreed, there is still much debate about the southern boundary. In an attempt to establish a definitive southern boundary, the distribution of 1,037 breeding passerine species in the Palearctic, and adjacent parts of the Afrotropical and Oriental regions north of 5°N, were analysed. The WorldMap computer program was used to combine these maps, to reveal species richness. The variations in the position of the southern boundary suggested by previous authorities gives rise to three zones: north of the northernmost boundary, which is unequivocally Palearctic; south of the southernmost boundary, which is unequivocally Afrotropical or Oriental; and a border region in between, which is analysed in detail here to establish an objective southern boundary for the region.

In 1973, during initial meetings of the editorial team of a planned handbook of birds in Europe, one of the topics of debate was the title of the forthcoming work. Several people opted for the title 'Birds of the Western Palearctic' because it was short and geographically clearly defined; others thought that the term 'Palearctic' was too little-known in birding circles to attract potential buyers. After long discussion, it was decided that the book should be called *Handbook of the Birds of Europe, the Middle East and North Africa*, and subtitled *The Birds of the Western Palearctic*. Despite the smaller font type given to this subtitle, the handbook soon became widely known under the latter name, or simply as *BWP*. Since then, many birders have become familiar with the terms 'Palearctic' and 'Western Palearctic', although few will claim to know exactly where the boundaries lie.

Although the use of the term 'Palearctic' is now well established, the region is not well defined. The name was introduced by Sclater (1858), who divided the world into a number of zoogeographical regions, each characterised by unique faunal components with geographic ranges restricted to that region. Sclater based his regional system on the distribution of passerine

birds, but analyses of other groups of terrestrial animals by subsequent workers, notably Wallace (1876), supported and expanded his scheme. Many books and checklists have now been published on the birds of the Palearctic. Their authors are more or less agreed on the western and eastern borders of the region, which stretch from Iceland and Morocco in the west, across to Japan, Kamchatka and the Chukotskiy Peninsula in northeast Russia in the east, but the number of bird species considered as Palearctic varies widely. This is partly due to differences in taxonomic approach; however, even when Dickinson (2003) is used as the authority on recognised species and races, there is wide variation in the total number of taxa published for the region: the Palearctic handbook of Hartert (Hartert 1903–23; Hartert & Steinbacher 1932–38) included 564 breeding passerine species; Vaurie (1959) included 620 species; Eck (1996) 635 species; and Beaman (1994) 693 species (these counts exclude introduced or accidental breeders). Eck (2004) presented a detailed overview of the differences among the three first-mentioned listings. It is clear that the apparent variation in number of species with time is explained largely by different views of what constitutes the southern limit

of the Palearctic region.

During work on the passerine volume of the forthcoming *Handbook of Geographical Variation and Distribution of Palearctic Birds* (Roselaar & Shirihai in prep.), the need for a well-defined southern border of the Palearctic became evident. It became apparent from the many detailed distribution maps that had been prepared for this work that an analysis of shared distributions could provide the most accurate assessment of the position of this southern boundary.

Methods and maps

The southern border of the Palearctic is established here by comparing separate breeding distribution maps of 1,037 passerine species. These A3-sized maps were compiled when working on species texts for *BWP* from 1987 onwards, but also cover all songbird species which occur outside the Western Palearctic in Eurasia and Africa north of 5°N. The maps are not the same as those used in *BWP* (which were prepared by Euan Dunn, Dorothy Vincent and Mike Wilson) but are, in part, based on the same

sources. For the region outside the Western Palearctic, the maps are more detailed than those in *BWP*, and more than 4,000 papers and books on breeding-bird distribution were used to compile them. This literature, too extensive to be listed here, includes the most recently published breeding-bird atlas data for various countries in Europe. Europe is, however, only a small part of the Palearctic, and comparable data for North Africa, Siberia, China, and various central and southern Asian countries is not available; an extensive literature review, covering the past 150 years, was thus necessary to establish breeding ranges for these areas. In addition, the locations named on thousands of specimen labels were checked in several reference collections. The individual species range maps based on these sources will be published in Roselaar & Shirihai (in prep.).

For analysis, the original maps were converted into digital format by the computer program WorldMap version 4.1 (Williams 2000). In terms of longitude, each grid cell was 1° longitude wide, with a total of 220 cells from 30°W east to 170°W covering the entire



Augusto Faustino

337. Temminck's Lark *Eremophila bilopha*, Tagdilt Track, Boumalne du Dades, Morocco, February 2006. Only Palearctic passerine species extend throughout the Sahara of North Africa, and no Afrotropical species occur. Consequently, it is considered that the entire Sahara belongs to the Palearctic region. Throughout this region, the number of breeding species is particularly low, but larks (Alaudidae) and wheatears *Oenanthe* are well represented. Many species, including Temminck's Lark, have adapted to survive in this harsh environment by exploiting a particular, specialised niche, which enables them to exist alongside otherwise similar species.

Palearctic from the Azores to the Chukotskiy Peninsula. In terms of latitude, 120 grid cells covered an area from 18°N to 86°N. One degree of longitude in the south of this area is wider than one degree of longitude in the north (being c. 104 km wide at 18°N, c. 64 km at 55°N, and c. 10 km at 85°N). Since grid cells of equal area were required for this analysis, the latitudinal grid-cell dimension had to be adapted: cells were c. 39 km 'high' at 18°N, c. 64 km high at 55°N, and c. 400 km high at 85°N. In other words, one degree of latitude at 18°N covers just over three cells, but one cell covers more than three degrees of latitude at 85°N. This has the disadvantage that distribution maps become somewhat distorted, being vertically compressed in the north and stretched in the south. However, the important point is that each grid cell covers an area of 4,062 km², which enables the comparison of actual range size of a northern breeder with that of a southern breeder; thus a northern breeding species occurring in 300 grid cells will have a similar breeding range size to that of a southern breeder also occupying 300 grid cells.

Species covered

The breeding distributions of all passerine species breeding north of 18°N in Africa, Europe, and Asia were plotted in the WorldMap program. The Cape Verde Islands were included by moving the plots three degrees to the north. No attempt was made to plot distributions in Greenland, the Philippines or Alaska, although these regions are partly visible at the fringe of the map. The taxonomy used in this paper is based on Dickinson (2003); scientific and English names follow the BB 'List of Birds of the Western Palearctic' (www.britishbirds.co.uk/bblist.htm), and Dickinson (scientific names) and Beaman (1994) for other regions. Using Dickinson's taxonomy, some 1,037 species came within the area defined above. However, some species have been split since Dickinson was published, and the following were acknowledged as separate species: Richard's Pipit *Anthus richardi* (northern Asia south to northern China) and Paddyfield Pipit *A. rufulus* (southern China southwards); African Stonechat *Saxicola torquatus* (Afrotropics), Common Stonechat *S. rubicola* (western Europe

and northern Africa east to the west Caucasus region) and Siberian Stonechat *S. maurus* (Ural Mountains and Caucasus eastward); Eastern Olivaceous Warbler *Hippolais pallida* (Sahara and the Balkans eastward) and Western Olivaceous Warbler *H. opaca* (Iberian Peninsula and northwest Africa); African Desert Warbler *Sylvia deserti* (western Sahara) and Asian Desert Warbler *S. nana* (central Asian deserts); Brown Flycatcher *Muscicapa dauurica* (northern Asia) and Williamson's Flycatcher *M. williamsoni* (mainland southeast Asia); and Golden Oriole *Oriolus oriolus* (Europe east to central Siberia) and Indian Golden Oriole *O. kundoo* (Indian Peninsula north to



338. Thick-billed Lark *Rhamphocoris clotbey*, Tagdilt Track, Boumalne du Dades, Morocco, February 2006. A number of Saharan specialities, including Thick-billed Lark, Temminck's Lark *Eremophila bilopha* and Red-rumped Wheatear *Oenanthe moesta*, are restricted to the northern fringe of the Sahara and the northern Arabian Peninsula, and show a closer affinity to the Palearctic than to the Afrotropics. Thick-billed Lark is a desert specialist with a nomadic lifestyle, and numbers in any particular region can vary greatly from year to year as it exploits the available food sources.

central Asia, the Tien Shan Mountains and northwest China) (see Wittmann *et al.* 1995; Helbig & Seibold 1999; Sangster *et al.* 1999; Rasmussen & Anderton 2005 and Ottoson *et al.* 2005 for the reasoning behind some of these splits). In addition, seven species were omitted because they have extensive or localised (relict?) ranges in both the Palearctic and the Afrotropical and/or Oriental regions: Oriental Lark *Alauda gulgula*, Red-rumped Swallow *Cecropis daurica*, Long-billed Pipit *Anthus similis*, Zitting Cisticola *Cisticola juncidis*, Clamorous Reed Warbler *Acrocephalus stentoreus*, Large-billed Crow *Corvus macrorhynchos* and House Sparrow *Passer domesticus*. Each of these seven may potentially be split (e.g. Rasmussen & Anderton 2005), but the taxonomic limits in each case are uncertain for the moment.

Variation in the southern boundary of the Palearctic

Many authors are uncertain where the southern limits of the Palearctic lie; they accept a fairly southern boundary, but include only 'truly Palearctic' species, while excluding 'species of predominantly Oriental or Afrotropical genera' (Vaurie 1959), even if the range falls largely or entirely north of their perceived southern limit. In this analysis, a species is assigned to a certain faunal region if more than half of its breeding range (established from the number of grid cells occupied) falls within the boundary of that region. Beaman (1994) and others also included as Palearctic those species which have an insignificant breeding population in the region, but which otherwise occur extensively within another faunal region; this premise is not adopted here.



Ian Boustead

339. Long-billed Pipit *Anthus similis*, Fujairah, United Arab Emirates, December 2004. Long-billed Pipit provides a typical example of the difficulties involved in assigning species to a particular zoogeographical region. Although much of the breeding range lies in both the Afrotropical and Oriental regions, several disjunct populations exist along the southern boundary of the Palearctic. Of these, *A. s. captus* breeds in Lebanon, Jordan, Syria and Israel, *A. s. decapthus* breeds in Iraq, Iran, Pakistan and Afghanistan, while *A. s. arabicus* breeds in the Afrotropical mountains of the southwest Arabian Peninsula. Whether *arabicus* or *decapthus* breeds in northern Oman and northernmost UAE has not definitely been established, but the avifauna here is predominantly Palearctic.

For the Western Palearctic, Hartert (1903–23) accepted a southern limit 'through the Sahara, a little bit more to the south in the Nile Valley, but excepting southern Arabia which is purely [Afro]tropical'. Other authors are more precise for the Sahara; Eck (1996) adopted 19°N as the southern border, while Hall & Moreau (1970) and Snow (1978) put the northern limit of the Afrotropical region at 20°N. Vaurie also accepted a southern limit at c. 19°N, but included southward extensions to c. 16°N in the Air (northern Niger) and Ennedi (northeast Chad) because some Palearctic taxa occur there (although the vast majority of breeding species are Afrotropical). Voous (1973–77) established the southern border in the western and central Sahara at 21°N, and to the southern Egyptian border in the east, though with southern extensions to 20°N along the Atlantic coastline and at 18°E to include the Banc d'Arguin (Mauritania) and the Tibesti Mountains in northern Chad. The editorial

team of *BWP* adopted the Voous list for taxonomy and species sequence, and also adopted Voous's southern boundary. In contrast, botanists, including Takhtadzhyan (1978) and Cox (2001), draw the southern limit of the Palearctic much farther north, along the southern fringe of the Mediterranean sub-region, which approximates to the northern fringe of the Sahara. Although all ornithological authorities include the Cape Verde Islands within the Palearctic, botanists exclude this archipelago (fig. 1).

For the Arabian Peninsula, opinions on the southern border differ widely. *BWP* placed this farther north than earlier authorities, at 28°N. In contrast, Vaurie (1959) drew it, rather imprecisely, 'south to the region of Mecca in the west and to Oman in the east', which is approximately 21°N. Many others include the entire Arabian Peninsula within the Palearctic, including Voous (1973–77), Dowsett & Forbes-Watson (1993), Beaman (1994) and Eck (1996). Martins & Hirschfeld (1994) included the entire peninsula, with the exception of the mountains of southwest Saudi Arabia, Yemen, and southern Oman. Botanists have equally varied opinions; Takhtadzhyan (1978) placed the boundary even farther to the north, and excluded the Syrian Desert from the Palearctic, while Cox (2001) included the entire Arabian Peninsula in the Palearctic.

For Pakistan, ornithologists agree that the mountains of the west and north constitute the boundary between the Palearctic and Oriental

regions, and that the Indus Plain lies entirely within the Oriental. However, most are unclear about the lower altitudinal limit for Palearctic birds, apart from Beaman (1994), who defined the boundary in Pakistan at 2,000 m. The coast of Baluchistan, in southwest Pakistan, and the neighbouring region of extreme southern or southeastern Iran are sometimes included in the Oriental region and sometimes in the Palearctic.

To the east, the Himalaya forms an obvious division between these two faunal regions but defining the boundary has again proved controversial. Takhtadzhyan (1978) considered the southern border of the Palearctic to lie just above the foothill zone where the subtropical zone and the lower montane zones meet, at c. 2,000 m in Nepal. Martens & Eck (1995) also identified the zone below 2,000 m in Nepal as (sub)tropical, with a temperate zone at 2,000–2,900 m (1,700–3,000 m), the latter dominated by evergreen oak forests including *Symplocos*, *Castanopsis* and *Quercus* spp. at lower elevations, and mixed evergreen and coniferous forest including Himalayan Hemlock *Tsuga dumosa* and Globe Magnolia *Magnolia globosa* over 2,600 m. Both Vaurie (1959) and Voous (1973–77) considered those species which occur upwards from the temperate mixed deciduous forest in the Himalaya and central China to be Palearctic. According to Beaman (1994), this type of forest occurs down to c. 2,000 m in Pakistan and Kashmir; to c. 2,500 m in Himachal Pradesh and Uttar Pradesh, northwest India; to c. 2,800 m from Nepal to Arunachal Pradesh,

northeast India, and northern Myanmar; to c. 2,500 m in Yunnan and southern Sichuan provinces, southwest China; and to 2,000 m in central and northern Sichuan Province. The lower altitudinal limit for the Palearctic in Nepal is thus unclear. The same is true in the mountains of central China; Schäfer (1938) stated that the Palearctic zone in central Sichuan Province starts above the coniferous forest (upper montane zone) at 3,500 m, rather than

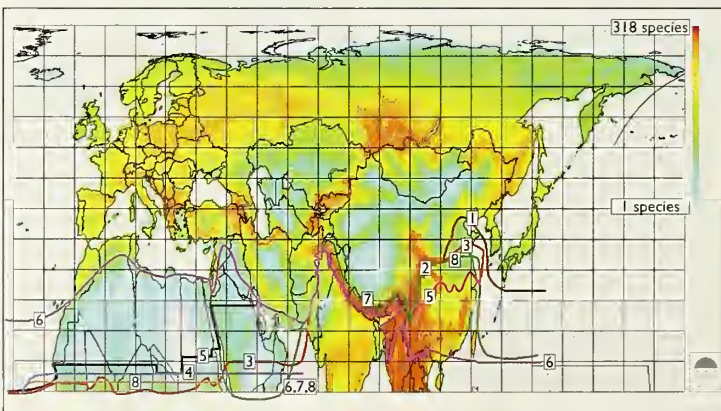


Fig. 1. The southern border of the Palearctic, as suggested by various authors, drawn on a biodiversity map of all passerine species breeding in the area of the map. Line 1: Hartert (1903–23); Line 2: Schäfer (1938); Line 3: Vaurie (1959); Line 4: Hall & Moreau (1970); Line 5: Cramp (1977); Line 6: Takhtadzhyan (1978); Line 7: Beaman (1994); and Line 8: Eck (1996). The key on the right-hand side of this figure (and subsequent figures) shows number of breeding passerine species from high (red) to low (blue).

the 2,000 m adhered to by Beaman.

Opinions on the southern boundary in eastern China differ widely too. Takhtadzhyan (1978) considered the flora of eastern China to be Palearctic, with the exception of the southern lowlands of Guangxi and Guangdong provinces. Voous (1973–77, 1985) took the Yangtze River as the boundary between the Palearctic and Oriental regions, while others have considered eastern China to be predominantly Oriental, with the Palearctic border at c. 33°N (Eck 1996); at 34°N (Beaman 1994); 'south of northern Hubei and Shandong', i.e. c. 32–34°N (Vaurie 1959); or even 'in the region of Beijing', i.e. c. 40°N (Hartert 1903–23).

Hartert (1903–23) considered that Taiwan and the islands to the south of Japan are *rein tropisch* [purely tropical], and thus fall within the Oriental region. However, all other authors incorporate the southern Japanese islands, including the Nansei-shoto (Ryukyu Islands), Kazan-retto (Volcano Islands) and Ogasawara-shoto (Bonin Islands), in the Palearctic, and Taiwan in the Oriental.

The western and eastern borders of the Palearctic are not discussed here: most authors agree that the Palearctic reaches west to Jan Mayen, Iceland and the Azores, and east to the Chukotskiy Peninsula, the Commander Islands (Komandorskiye Ostrova), and Ogasawara-shoto. Only Vaurie (1959) and Voous (1985) included eastern Greenland, while Vaurie (1965) included the whole of Greenland. In an analysis based on breeding ranges of passerines, it makes little sense for Greenland to be

included, as the few passerines occurring there have circumpolar ranges, and are thus shared between the Palearctic and Nearctic.

Unequivocally Palearctic birds and a preliminary southern boundary

The first stage of the analysis was to establish two lines: (Line 1) the northernmost southern border of the Palearctic ever proposed (the northern limit of Takhtadzhyan (1978) in the Sahara and Syria, Beaman (1994) in Iran, Pakistan, and the Himalaya, Schäfer (1938) in central China, and Hartert (1903–23) in eastern China and southern Japan); and (Line 2) the southernmost of all boundaries proposed, following Vaurie (1959) for the Sahara, Voous (1973–77), Beaman (1994) and Eck (1996) for the Arabian Peninsula, Takhtadzhyan (1978) and Martens & Eck (1995) along the foothills of the Himalaya at c. 1,700–2,000 m, and the capricious line of Takhtadzhyan through central Myanmar and southern China. All authors agree that birds occurring largely or completely north of Line 1 are unequivocally Palearctic, while those occurring south of Line 2 are truly Afrotropical or Oriental. Fig. 2 shows the combined distributions of all Palearctic passerines breeding predominantly north of Line 1, while fig. 3 shows the distributions of Afrotropical and Oriental species to the south of Line 2.

A parallel can be drawn between these two lines, Line 1 and Line 2, and the lines defining the boundary between the Oriental and Australasian regions in Indonesia. Here, the unequivocal eastern boundary of the Oriental

region is formed by Wallace's Line (just east of Borneo and Bali), the unequivocal western border of the Australasian region is Lydekker's Line, just west of New Guinea and Kepulauan Kai (Kai Islands), while the transition zone between these lines ('Wallacea') is divided halfway by Weber's Line (just west of the Moluccas) where the fauna of both regions reaches equilibrium.

Fig. 2 shows that a

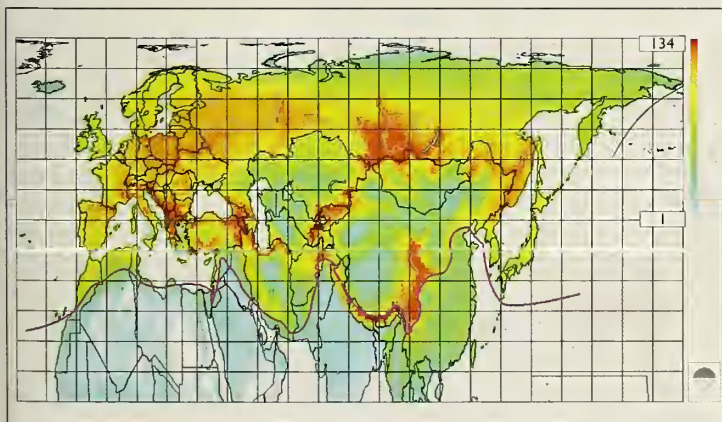


Fig. 2. Northernmost suggested border of the southern Palearctic (Line 1), and distribution of all unequivocally Palearctic passerines (breeding predominantly north of the line). This line follows southern border of Takhtadzhyan (1978) in the west, Beaman (1994) in the centre, and Schäfer (1938) and Hartert (1903–23) in the east.

few widespread Palearctic species also occur widely throughout the Sahara and Arabian Peninsula (Crested Lark *Galerida cristata*, Eastern Olivaceous Warbler and Southern Grey Shrike *Lanius meridionalis*) while one, Rufous Bush Robin *Cercotrichas galactotes*, has a separate population in the Sahel zone. However, even these few species breed in more grid cells to the north of Line 1 than to the south; the same applies to a few species which are widespread in the plains of the Indian Peninsula (Crested Lark, Southern Grey Shrike, Great Tit *Parus major*) and 22 species in the plains of eastern China (e.g. Barn Swallow *Hirundo rustica*, White Wagtail *Motacilla alba*, Wren *Troglodytes troglodytes*, Brown Dipper *Cinclus pallasii*, Siberian Stonechat, Blue Rock Thrush *Monticola solitarius*, Blackbird *Turdus merula*, Great Tit, Coal Tit *Parus ater*, Eurasian Nuthatch *Sitta europaea*, Brown Shrike *L. cristatus*, Eurasian Jay *Garrulus glandarius*, Magpie *Pica pica*, Tree Sparrow *Passer montanus*, Chestnut-eared Bunting *Emberiza fucata* and Meadow Bunting *E. cioides*). In addition, Taiwan has 29 truly Palearctic species (including Barn Swallow, Asian House Martin *Delichon dasypus*, White Wagtail, Grey Wagtail *Motacilla cinerea*, Wren, Alpine Accentor *Prunella collaris*, Brown Dipper, Varied Tit *Parus varius*, Coal Tit, Eurasian Jay, and Nutcracker *Nucifraga caryocatactes*).

Conversely, some Afrotropical species breed to the north of Line 2: Plain Martin *Riparia paludicola*, Common Bulbul *Pycnonotus bar-*

batus and Black-crowned Tchagra *Tchagra senegalus* are Afrotropical species breeding in the Palearctic only in northwest Africa. Others extend well north to reach southern Algeria (e.g. Red-billed Firefinch *Lagonosticta senegalensis*, perhaps aided by recent introductions), or into southern Egypt via the Nile valley (e.g. African Pied Wagtail *M. aguimp*) (fig. 3). Many Afrotropical passerines also extend into southwest Arabia, and some reach north into the Levant region (e.g. Black Bush Robin *Cercotrichas podobe*, Blackstart *Cercomela melanura* and Fan-tailed Raven *Corvus rhipidurus*).

The number of Oriental species extending into the Palearctic is even greater, with several ranging from the Indian subcontinent west or northwest to Iraq and southern Turkey (e.g. White-cheeked Bulbul *P. leucogenys*, Common Babbler *Turdoides caudata* and Yellow-throated Sparrow *Petronia xanthocollis*). Other Oriental species have skirted around the western flank of the Tien Shan Mountains and pushed north into central Asia, with some reaching southern or even central Kazakhstan (e.g. Pied Stonechat *Saxicola caprata*, Asian Paradise-flycatcher *Terpsiphone paradisi*, Indian Golden Oriole, Long-tailed Shrike *Lanius schach* and Common Myna *Acridotheres tristis*, although the recent range extension of the last species in this region is probably due to introductions). To the east, Oriental species also extend into the Palearctic, in northeast China (e.g. Black *Dicrurus macrocercus*, Ashy *D. leucophaeus* and Hair-crested Drongo *D. hottentottus* and Red-billed Blue

Magpie *Urocissa erythrorhyncha*), with some even reaching the Russian Far East (e.g. Black-naped Oriole *O. chinensis* and Asian Paradise-flycatcher). Despite their northerly distributions, even those species which extend farthest north occupy more grid cells in the Oriental region than in the Palearctic. For example, Indian Golden Oriole occupies 788 grid cells in the Indian Peninsula (Oriental region) and 502 in the Palearctic section of its

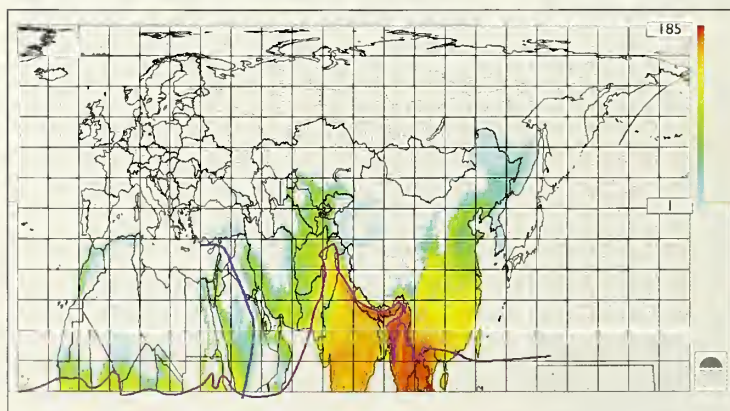


Fig. 3. Southernmost suggested border of the southern Palearctic (Line 2), and distribution of all unequivocally Afrotropical and Oriental passerines (breeding predominantly south of the line). This line follows southern border of Vaurie (1959) in the Sahara; Voous (1973–77), Beaman (1994) and Eck (1996) in Arabia; and Takhtadzhyan (1978) further east. The vertical blue line through Arabia represents the boundary between the Afrotropical and Oriental regions based on the distribution of passerine breeding species.

range, which extends from the Tien Shan Mountains east into the Xinjiang Uygur Autonomous Region in westernmost China.

By comparing the number of Palearctic and Afrotropical/Oriental species in each grid cell in figs. 2 and 3, a line of equilibrium between these regions becomes apparent (fig. 4). To the north of this line Palearctic species predominate, to the south of it Afrotropical and Oriental species predominate. This line roughly follows a latitude of 19°N in the Afrotropics, lies close to the boundary followed by BWP in Arabia, to Beaman's (1994) line through western and central Asia, and to Voous's (1973–77) line across eastern China. However, this preliminary line was based on birds breeding largely to the north of Line 1 and south of Line 2, and thus excludes the species occurring predominantly *between* these lines in the Sahara, the Arabian

Peninsula, the Himalaya between 2,000 and 2,800 m, central China between 2,000 and 3,500 m, and throughout the lowland plains and hills of eastern China. The species in each of these regions are discussed below, before an attempt is made to establish a definitive southern limit to the Palearctic.

Saharan species

Eighteen species occur primarily in the Sahara, mainly larks (Alaudidae) and wheatears *Oenanthe*, together with Pale Crag Martin *Ptyonoprogne obsoleta*, African Desert Warbler, Fulvous Babbler *Turdoides fulva*, Brown-necked Raven *C. ruficollis*, Desert Sparrow *Passer simplex*, Trumpeter Finch *Bucanetes githagineus* and House Bunting *Emberiza striolata* (fig. 5). Since only truly Palearctic species extend throughout the Sahara (fig. 2) and no Afrotropical species occur here

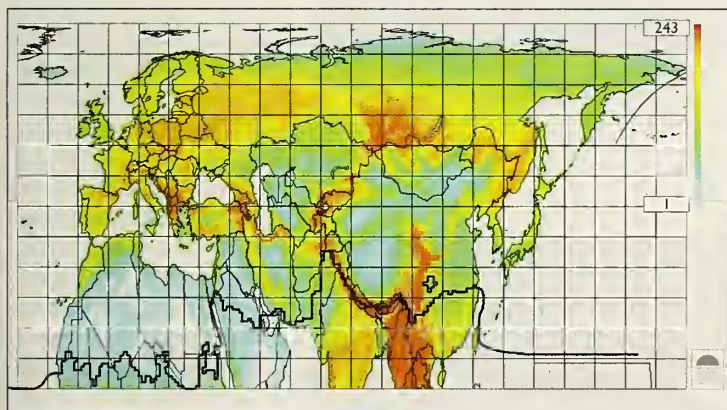


Fig. 4. Preliminary southern border of the Palearctic, separating unequivocally Palearctic and unequivocally Afrotropical and Oriental passerine species, based on number of species in each grid cell as counted from figs. 2 & 3 (line drawn where number for each region is in equilibrium). Map and southern boundary ignore those species breeding predominantly between Line 1 and Line 2.

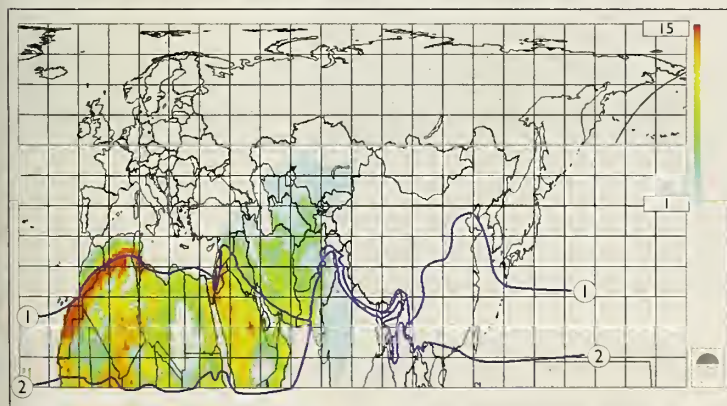


Fig. 5. Distribution of species with a breeding range falling predominantly between Line 1 and Line 2 in the Sahara and Cape Verde Islands. For definitions of these Lines, see figs. 2 & 3.

Fig. 3), it is considered that the Sahara in its entirety belongs to the Palearctic. Furthermore, approximately half of all Saharan species extend into the Palearctic regions of Iran and/or Kazakhstan, while of the four species extending to the Oriental region in the deserts of Pakistan or northwest India, two also breed north to Kazakhstan. In addition, a number of species are restricted to the northern fringe of the Sahara and the northern Arabian Peninsula, thus nearer to the Palearctic than to the Afrotropics (e.g. Thick-billed Lark *Rhamphocoris clotbey*, Temminck's Lark *Eremophila bilopha* and Red-rumped Wheatear *O. moesta*). The only species restricted to the southern fringe of the Sahara is Black-crowned Sparrow-lark *Eremopterix nigriceps*; this and the widespread

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340. White-throated Redstart *Phoenicurus schisticeps*, Jiuzhaigou, Sichuan Province, China, July 2006. Redstarts reach their greatest diversity in the mountains bordering the southern fringe of the Palearctic in the Himalaya and western/central China, where they occupy a wide range of habitats. White-throated Redstart typically breeds in scrub forest on rocky slopes and along forest edge above 3,200 m from Nepal to Bhutan, and in western China.

House Bunting are the only Saharan species which extend exclusively to north-west India. These two are perhaps the only Saharan species of southern origin, because other *Eremopterix* species are restricted to the Afrotropical and the Oriental regions, while the relationships of House Bunting appear to be with the Afrotropical buntings such as Cinnamon-breasted *Emberiza tahapisi* and Cape Bunting *E. capensis*. Clearly, the Saharan passerine fauna is predominantly Palearctic. Alternatively, if a faunal region is defined as an area which has more endemic species than species shared with other regions, the Sahara and Syrian deserts may form a valid zoogeographical unit, the 'Eremian' region, because 18 passerines are endemic to the Sahara and Syrian (semi-)deserts, sharing their range with just three Palearctic and no Afrotropical species.

The Cape Verde Islands belong to the Palearctic because, of the ten breeding passerines there, Palearctic species predominate. Of these ten, three are shared with the Palearctic (Spectacled Warbler *Sylvia conspicillata*, Blackcap *S. atricapilla* and Spanish Sparrow *Passer hispaniolensis*); four are Saharan (and thus also Palearctic – Bar-tailed Desert Lark *Ammomanes cinctura*, Hoopoe Lark *Alaemon alaudipes*, Brown-necked Raven and Black-crowned Sparrow-lark); and three are endemic. Of the last group, Raso Lark *Alauda razae* seems likely to

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341. Indian Blue Robin *Luscinia brunnea*, Jamoti, Karnataka, India, April 2006. Although the stunning Indian Blue Robin is a common and widespread summer visitor to the Himalaya and mountains of western/central China, it is secretive, usually keeps close to the ground, and sings from deep within cover. Like many species in this region, it breeds in temperate forest between 2,400 and 3,200 m, in and above the zone of overlap between the Oriental and Palearctic regions.

have Palearctic affinities, while the other two are more likely to be Afrotropical (Cape Verde Warbler *Acrocephalus brevippennis* is morphologically close to Greater Swamp Warbler *A. rufescens*, and Cape Verde Sparrow *P. iagoensis* to an African sparrow group including Rufous Sparrow *P. motitensis*).

Arabian species

The overwhelming majority of the breeding birds of south and southwest Arabia are shared with the Afrotropics; 24 of the 70 Afrotropical species falling within the geographical boundaries used in this analysis also occur in southwest Arabia (see fig. 3), while of the Palearctic species only Magpie extends to the same area (fig. 2). Consequently, all ten endemic Arabian species (fig. 6), which are found in the southwest of the peninsula, are considered to be Afrotropical. This is reinforced by examining the relationships of these ten species: eight (White-spectacled Bulbul *Pycnonotus xanthopygos*, Yemen Thrush *T. menachensis*, Yemen Parusoma *Parusoma buryi*, Arabian Babbler *T. squamiceps*, Tristram's Starling *Onychognathus tristramii*, Arabian Waxbill *Estrilda rufibarba*, Olive-rumped Serin *Serinus rothschildi* and Yemen Serin *S. menachensis*) show a close morphological resemblance to related Afrotropical or, in some cases, Oriental species. Only two endemics appear to be of Palearctic origin – Yemen Accentor *Prunella fagani* (geographically isolated from a group of accentors of similar appearance, including Radde's Accentor *P. ocularis* of the mountains of Turkey and northern Iran) and Yemeni Linnet *Carduelis yemensis* (related to Linnet *C. cannabina*). No passerines are endemic to the interior deserts and coastal

plains of Arabia. Since the species occurring throughout these areas of the Arabian Peninsula are shared with the Sahara, the lowlands are best considered Palearctic, and the mountains of the southwest as Afrotropical.

Mid-altitude species of the Himalaya and central China

For the zoogeographical affinities of species in the Himalaya, an analysis was made of species occurring in Nepal, based on the altitudinal distribution of breeding records supplied by Martens & Eck (1995), supplemented by data from Grimmett *et al.* (1998), the latter mainly for species occurring at lower elevations (a zone less well covered by Martens & Eck). A total of 104 Nepalese bird species which are widespread in the plains and hills of the Indian Peninsula are considered as Oriental; these are augmented by a few species endemic to the Himalayan foothills (if occurring entirely below 2,000 m), and by 69 Oriental species from the plains and hills of mainland southeast Asia, many of which extend westwards through the eastern Himalaya, and occur in Nepal mainly between 1,000 and 2,000 m. Palearctic taxa are represented in Nepal by 65 species which are widespread in the Palearctic north of 35°N; these occur mostly above 2,800 m, but some are restricted to the lowlands or foothills (see fig. 2). These are augmented by 70 endemic species of the southern and eastern fringes of the Tibetan Plateau, which occur predominantly above 2,800 m in Nepal, the altitudinal lower boundary of the Palearctic of Beaman (1994). The distribution of species largely confined to the zone between 2,000 and 2,800 m in Nepal is plotted in fig. 7 (these are

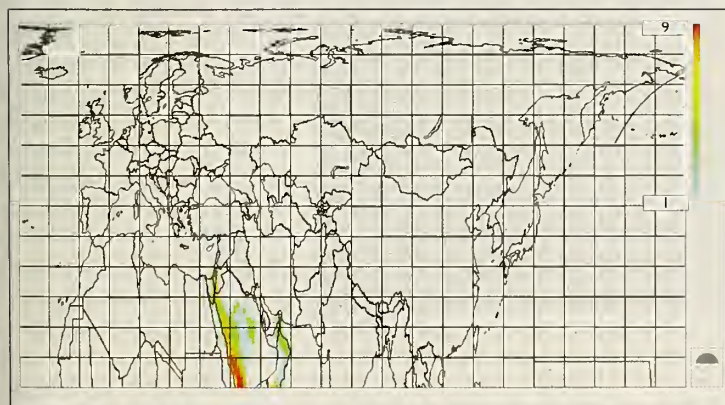
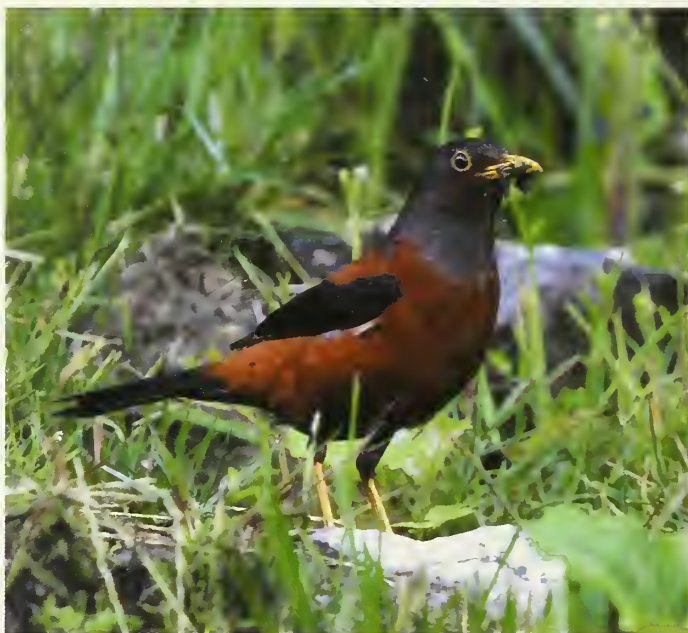


Fig. 6. Distribution of species with a breeding range falling predominantly between Line 1 and Line 2 in the Arabian Peninsula (ten Arabian endemics). For definitions of these Lines, see figs. 2 & 3.

the birds not used in the preliminary analysis for figs. 2 and 3). Fig. 7 shows clearly that most species breeding at this altitude in Nepal also extend into the eastern Himalaya, and many also occur in the hills of south and east Assam, India, the mountains of northern, northeastern and western Myanmar, and into western Yunnan Province, China. A smaller number of these Nepalese species also

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342. Chestnut Thrush *Turdus rubrocanus*, Jiuzhaigou, Sichuan Province, China, July 2006. Two races of Chestnut Thrush breed in the mountains fringing the southern boundary of the Palearctic. The nominate, pale-headed, form breeds at 2,300–3,300 m in the Himalaya, from E Afghanistan to Arunachal Pradesh, India, and the dark-headed form *T. r. gouldi* (illustrated) breeds at 2,800–3,800 m in montane forest in western/central China.

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343. Plain-backed Thrush *Zoothera mollissima*, Emei Shan, Sichuan Province, China, April 2005. Within the Palearctic, *Zoothera* thrushes reach their greatest diversity in the eastern Himalaya, where seven species breed, these species having ranges in the Oriental as well as the Palearctic region. Plain-backed Thrush is an altitudinal migrant, breeding entirely within the Palearctic, mostly between 3,000 and 4,300 m, but descending into the Oriental region in winter, where it occurs between 1,400 and 2,800 m.

extend south into the mountains of northern Thailand, northern Laos, and north-western Vietnam, while others reach north to Sichuan, Gansu, and southern Shaanxi provinces in central China, or reappear in the hills of south-central China east to the hills of Fujian Province in eastern China, and some even reach Taiwan. In contrast to the Oriental species which predominate at 1,000–2,000 m in Nepal (see above), very few of those species at 2,000–2,800 m extend to the hills of mainland southeast Asia or Hainan Island, China.

When the number of species per 100 m of altitude is plotted for the same unequivocally Palearctic and Oriental species used in figs. 2 and 3, it becomes clear that some Palearctic species extend down below 100 m while some Oriental species reach up to 3,200 m, even though their main distributions are (respectively) above 2,800 m/below 2,000 m (fig. 8). The elevation at which Palearctic and Oriental passerines appear to reach an equilibrium is approximately 2,400 m. Therefore, all 68 species with a main breeding distribution between 2,000 and 2,800 m are, for further analysis, divided into species occurring predominantly at 2,400–2,800 m (36 species, classed as Palearctic), and those predominantly at 2,000–2,400 m (32 species, Oriental).

A similar analysis was undertaken using altitudinal data from Schäfer (1938), who carried out a transect

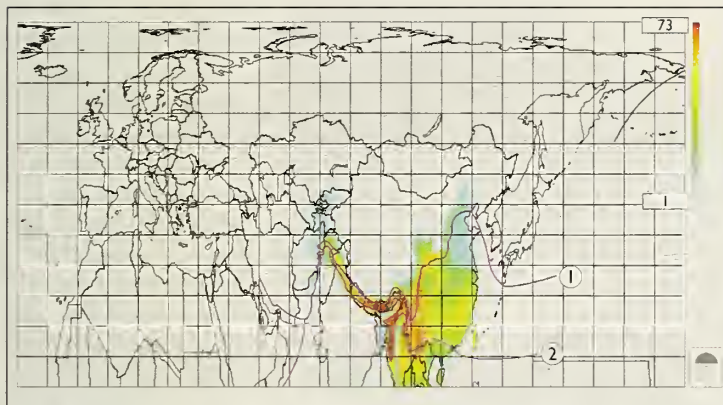


Fig. 7. Distribution of species with a breeding range falling predominantly between Line 1 (at c. 2,800 m) and Line 2 (at c. 2,000 m) in Nepal. For definitions of these lines, see figs. 2 & 3.

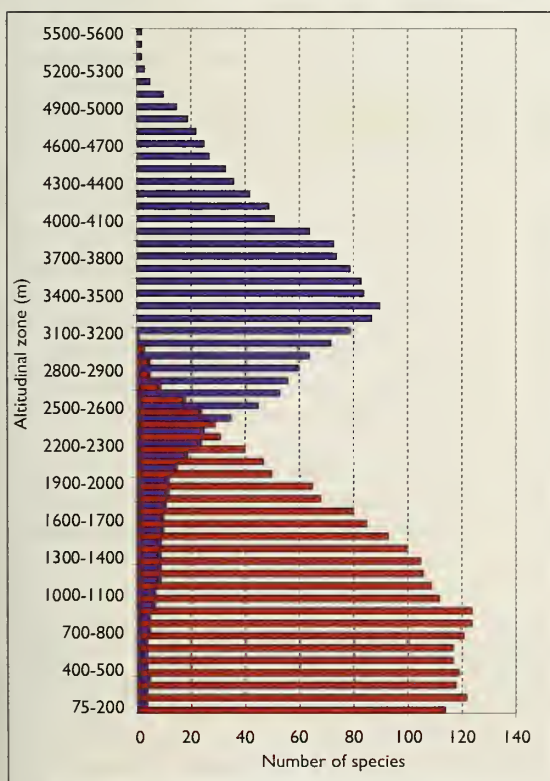


Fig. 8. Number of passerine species per 100 m change in elevation in the Himalaya, Nepal, based on unequivocally Palearctic and Oriental birds (those mapped in fig. 2 and fig. 3, respectively). Nepalese species with a distribution predominating between 2,000 m and 2,800 m are excluded (see fig. 7 for the horizontal distribution of these species). Key: blue = 135 Palearctic species; red = 185 Oriental species.

in central China. Starting in the Red Basin, an extension of the eastern lowland plain into central Sichuan, he surveyed bird distribution continuously to the Tibetan Plateau in eastern

Qinghai Province. He found a strong turnover in species composition at 2,000–2,600 m, with species of the (sub)tropical lowland plain occurring up to 2,000 m (2,600 m), and Palearctic ones mainly from (2,000 m) 2,500 m upwards, but with 20 species of the latter group below 1,000 m. Based on his data, an equilibrium between Palearctic and Oriental passerines occurs at c.

2,300–2,400 m. Therefore, mid-altitude endemics with a main altitudinal range of 2,000–2,400 m in central China are considered as Oriental, while those inhabiting the bamboo (*Bambuseae*) jungle and cloud forest at 2,400–3,800 m are Palearctic.

Eastern China

Of the 37 species which occur predominantly between Line 1 and Line 2 in China, and below 2,400 m, remarkably few occur beyond eastern China (fig. 9). To establish whether these species are essentially Palearctic or Oriental, it is necessary to review the remaining passerine fauna in this area. Of the unequivocal Palearctic species (fig. 2), 37 extend into the plains and/or hills of eastern China, as do 50 unequivocally Oriental species, which occur predominantly south of Line 2 (fig. 3). In addition, several species found at mid elevations in the Himalaya also extend into eastern China; 17 occur mainly at 2,400–2,800 m in the Himalaya and are considered Palearctic, and 12 breed predominantly at 2,000–2,400 m and are treated as Oriental. This gives a combined total of 54 Palearctic and 62 Oriental breeding species in the area of eastern China under discussion (see table 1).

Clearly, the avifauna of eastern China is of mixed origin, but Oriental species predominate (table 1). Consequently, eastern China is here considered to belong to the Oriental region, as are its 37 endemic bird species, even though the difference in number of Oriental and Palearctic species is small. The

Table 1. Number of Palearctic, Oriental, and endemic passerine species of some regions and islands in East Asia.

	Palearctic	Oriental	endemic	
Eastern China	54	62	37	Oriental species predominate
Taiwan	33	46	12	Oriental species predominate
Nansei-shoto (Ryukyu Islands)	11	2	3	Palearctic species predominate
Daito (Borodino) Islands	8	0	0	Palearctic species predominate
Ogasawara-shoto (Bonin Islands)	6	0	3	Palearctic species predominate
Kazan-retto (Volcano Islands)	4	0	0	Palearctic species predominate

endemics include some interesting species restricted to the hills of Sichuan, southern Gansu and/or southern Shaanxi provinces, such as Martens's Warbler *Seicercus omeiensis*, Emei Leaf Warbler *Phylloscopus emeiensis*, Emei Shan Liocichla *Liocichla omeiensis*, and Slaty Bunting *Latoucheornis siemsseni*.

Taiwan

A total of 91 passerine species breed regularly in Taiwan. This includes 29 species with widespread distributions within the Palearctic and 29 similarly widespread Oriental species (figs. 2 & 3). A further 21 species are shared with the mid-altitude range of the Himalaya in Nepal, or with eastern China – a range spanning a region in which the avifauna of the Palearctic and Oriental regions reaches equilibrium. Following analysis of these regions (see above), 17 species are considered to be Oriental and four Palearctic. The Taiwan avifauna is thus mixed, but Oriental species predominate (table 1). This resembles the regional affinities of species in eastern China and, similarly, there is no clear altitudinal divergence among species, with some Palearctic species restricted to the lowlands, and some Oriental species breeding higher up in the moun-

tains. Since Oriental passerines predominate, the 12 endemics are all attributed to the Oriental region. These include species from predominantly Palearctic genera (including Collared Bush Robin *Luscinia johnstoniae* and Flamecrest *Regulus goodfellowi*), although these are not particularly close to any Palearctic species. Other endemics show a morphological resemblance to more widespread Oriental counterparts (e.g. Styan's Bulbul *Pycnonotus taiwanus* with Light-vented Bulbul *P. sinensis*, Taiwan Whistling Thrush *Myophonus insularis* with Blue Whistling Thrush *M. caeruleus* and Steere's Liocichla *Liocichla steerii* with Emei Shan Liocichla).

The Lanyu Islands, close to southeast Taiwan, are poor in breeding species, but among these are some shared with the Philippines (Lowland White-eye *Zosterops meyeri* and Pacific Swallow *H. tahitica*). More detailed research is necessary before the islands' zoogeographic position can be established.

Southern Japanese islands

Of the passerines found on the Nansei-shoto (Ryukyu Islands), most are shared with the main islands of Japan, and thus belong to the Palearctic; only Light-vented Bulbul and Pacific

Swallow are unequivocally Oriental. The relationships of the three endemic passerines appear to lie with Palearctic species also: Ryukyu Robin *Luscinia komadori* appears closely related to Japanese Robin *L. akahige* or Rufous-headed Robin *L. ruficeps* of central China; Amami Thrush *Zoothera major* is a close relative of White's Thrush *Z. aurea* of the northern Palearctic and Scaly

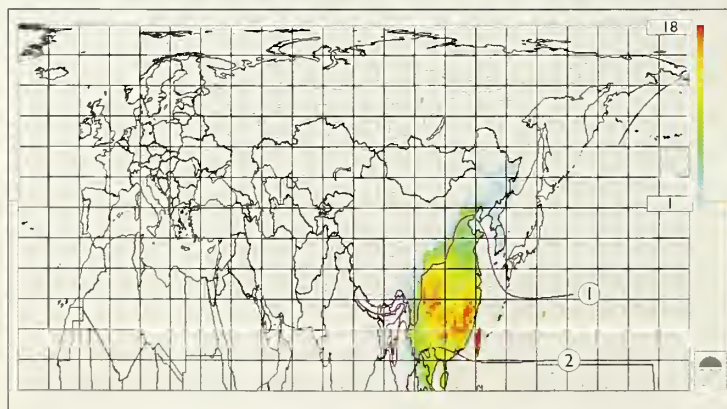


Fig. 9. Distribution of species with a breeding range falling predominantly between Line 1 and Line 2 in eastern China (37 species, virtually endemic to eastern China). For definitions of these lines, see figs. 2 & 3.

Thrush *Z. dauma* of the Himalaya; and Lidth's Jay *G. lidthi* is morphologically close to Black-headed Jay *G. lanceolatus* of the western Himalaya.

Eight passerines breed on the Daito (Borodino) Islands. All of these (Brown-eared Bulbul *Microscelis amaurotis*, Wren, Blue Rock Thrush, Japanese Bush Warbler *Cettia diphone*, Varied Tit, Japanese White-eye *Zosterops japonicus*, Bull-headed Shrike *Lanius bucephalus*, and Tree Sparrow) are shared with the main islands of Japan and are Palearctic. Six of the nine species breeding, or formerly breeding, on the Ogasawara-shoto (Bonin Islands) are also shared with the main islands of Japan, but the other three are endemic (Bonin Thrush *Zoothera terrestris*, Bonin Honeyeater *Apalopteron familiare*, and Bonin Grosbeak *Chaunoproctus ferreorostris*) and the nearest relatives of these species are not yet satisfactorily established. The four passerines breeding regularly on the Kazan-retto (Volcano Islands) are also shared with the main islands of Japan. Together, the islands in southern Japan have Palearctic taxa predominating and thus are included in the Palearctic (table 1).



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344. Elliot's Laughing-thrush *Garrulax elliotii*, Huanglong, Sichuan Province, China, April 2005. Although most laughing-thrushes are confined to the Oriental region, several species breed in the Himalaya and western China between 2,000 and 2,800 m, where Palearctic and Oriental faunas overlap. Elliot's Laughing-thrush is one of few species of laughing-thrush that is entirely restricted to the Palearctic, where it breeds mainly at 2,000–4,000 m in the mountains of central China from Qinghai east to Gansu Province, and south to northern Yunnan Province.

A definitive southern boundary of the Palearctic

After establishing the affinities of species that occur predominantly between Line 1 and Line 2 (figs. 2–9), a revised line can be determined according to whether Palearctic or Afrotropical and/or Oriental species predominate in each grid cell (see fig. 10). Owing to the inclusion of the (semi-)desert region of the Sahara in the Palearctic, this revised line takes a slightly more southerly track than the preliminary line (fig. 4) in Africa (at c. 19°N, but north to Gebel Elba at c. 22°N in the extreme east). Within the Arabian

Peninsula, the revised southern boundary includes the entire region except the mountains of the south and southwest (Afrotropical) and the coastal plain of northern Oman (Oriental). The preliminary and revised lines are similar across the Indian subcontinent. Both include the coastal plain of southern Iran and southern Baluchistan within the Oriental region, the mountains of western Pakistan in the

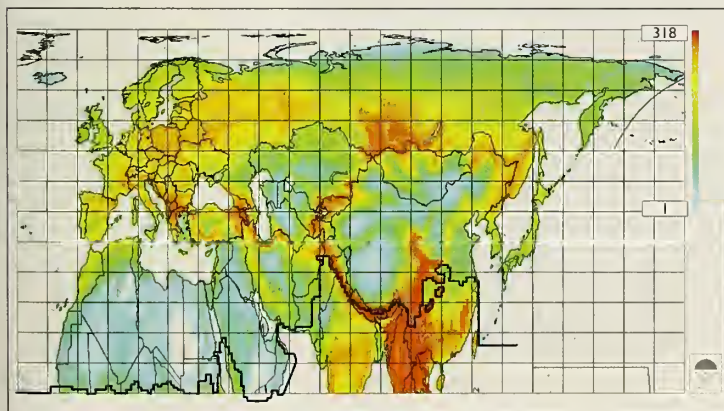


Fig. 10. Definitive southern border of the Palearctic region, based on distribution of all passerine species breeding within the area of the map (species richness shown). The line is drawn where number of breeding Palearctic and Afrotropical/Oriental species reaches an equilibrium.

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345. Black-browed Tit (Père Bonvalot's Tit) *Aegithalos bonvaloti*, Cang Shan, Dali, Yunnan Province, China, September 2005. This attractive 'long-tailed tit' breeds up to 3,400 m in the mountains of northern Yunnan and central Sichuan provinces, China, which form the boundary between the Palearctic and Oriental regions in central China.

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346. White-capped Water Redstart *Chaimarrornis leucocephalus*, Siguniang Shan, Sichuan Province, China, June 2006. White-capped Water Redstart inhabits fast-flowing streams of the Himalaya and hill ranges east to eastern China, where it breeds mostly between 1,800 and 4,600 m. Within such a wide altitudinal range, it occupies suitable habitat in both the Palearctic and Oriental regions, but its main distribution lies within the Palearctic.

Palearctic (including the Safed Koh in northwest Pakistan), although the Jalalabad valley, just north of the Safed Koh in Afghanistan, is Oriental. In China, Xizang (Tibet Autonomous Region) is Palearctic, but the altitudinal upper limit of the Oriental region, at c. 2,400 m, locally reaches into southernmost Xizang (Gyirong, Nyalam, part of upper Arun Valley, Yadong area in Chumbi Valley, Dihang/ Yarlung Valley near Bomi, Zayü Valley, parts of Nu Jiang/Salween and Lancang Jiang/Mekong rivers). In Yunnan Province, the Palearctic extends south to the Dali area, and east to c. 103°E between northern Yunnan and central Sichuan provinces. Farther east the border becomes highly capricious, reaching north in the lowland plains to 32°N near the Yangtze River estuary, and still farther north into the upper Han Shui River basin in northern Hubei Province. In Sichuan Province, the low-lying Red Basin is undoubtedly Oriental (as in fig. 4), but the surrounding mountains have a predominantly Palearctic passerine fauna (above c. 2,300–2,400 m).

A Palearctic list

In this analysis, species are assigned to a certain faunal region according to their breeding distribution; for example, one with the larger part of its range in the Orient is defined as Oriental, even though a smaller part may extend well into the Palearctic (as defined here). Compare this with the concept of a national list,

where every species which has occurred within that nation's borders is counted. The same approach could be applied to a list of Palearctic birds, which then would include species having only a tiny foothold in the Palearctic as a breeding bird (or even species which occur as a migrant or vagrant), even though the species is mainly Afrotropical or Oriental in distribution (or in some cases Nearctic: Grey-cheeked Thrush *Catharus minimus* and Savannah Sparrow *Passerculus sandwichensis* breed regularly in extreme north-eastern Siberia). Those species which have recognisable taxa in the Palearctic have a strong case for inclusion on the Palearctic list; for example, the Afrotropical Black-crowned Tchagra, of which there is a distinct race resident in northwest Africa, or the Oriental Common Babbler, which has distinct taxa in the Middle East. Species like these, with recognisable taxa in different faunal regions, are probably the first that should be examined in terms of potential taxonomic splits, not only those with distributions shared between the Palearctic and Afrotropical or Oriental regions, but also those with ranges which extend into both southern regions, like Graceful Prinia *Prinia gracilis* (and indeed Oriental Skylark, Red-rumped Swallow, Long-billed Pipit, Zitting Cisticola, Clamorous Reed Warbler, Large-billed Crow, and House Sparrow mentioned already), which are not included here because of the difficulty in assigning them to a particular region.

In this zoogeographical analysis, 563 passerine bird species are considered to be Palearctic. All these are also listed as Palearctic by Beaman (1994), apart from some species recently discovered or split (including some *Seicercus* and *Phylloscopus* warblers, and Sichuan Treecreeper *Certhia tianquanensis*). Beaman listed a further 43 species as Palearctic



Phil Gregory

347. Lidth's Jay *Garrulus lidthi*, Amami-Oshima, Japan, February 2006. The islands of the Nansei-shoto (Ryukyu Islands) form the southeastern boundary of the Palearctic and are home to 18 passerine species, most of which are shared with the main islands of Japan, while others are endemic to the islands. Lidth's Jay is found only on Amami-Oshima, but is morphologically close to Lanceolated Jay *G. lanceolatus* of the western Himalaya.

which here are considered to have Afrotropical affinities (mainly in Arabia, where opinions on the Palearctic boundary differ widely), and 92 species here considered to belong to the Oriental region (though some do extend into the Palearctic, some quite extensively). Nonetheless, Beaman's Palearctic list represents a valuable overview of species occurring in the Palearctic, provided that those restricted to the southwestern and southern Arabian Peninsula are excluded.

Would the southern boundary of the Palearctic change if non-passerines were included?

Although the available maps for Palearctic non-passerines are more crude than those for passerines, many non-passerines show range sizes and distributions comparable with those of passerines, especially birds of forests, shrub, and open plains, such as pheasants and quails (Phasianidae), raptors (Accipitridae), sandgrouse (Pteroclididae), pigeons and doves (Columbidae), cuckoos (Cuculidae), owls (Strigidae), nightjars (Caprimulgidae) and woodpeckers (Picidae). Some non-passerine landbirds are far more widespread than any songbird (e.g. Peregrine

Falcon *Falco peregrinus*, Osprey *Pandion haliaetus* and Barn Owl *Tyto alba*), but these are relatively few and their number would have little effect on the boundaries established here. Note that the zoogeographical regions as defined by Sclater (1856) are based on landbirds; seabirds such as petrels (Procellariidae), gannets (Sulidae) and auks (Alcidae) simply do not fit this essentially land-based concept.

On the other hand, the passerines include very few waterbirds (just two dippers) or tundra dwellers (mainly a few pipits, finches, and buntings), while these are numerous among non-passerine species – e.g. waterfowl (Anatidae), divers (Gaviidae), grebes (Podicipedidae), herons (Ardeidae) and, particularly on the tundra, many waders (Charadriidae and Scolopacidae). The breeding ranges of many of these are extensive and/or extend to other continents, and including them in an analysis such as this may affect the outcome, although their inclusion is more likely to affect the northwestern and/or northeastern boundary than the southern one.

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Racial identification and assessment in Britain: a report from the RIACT subcommittee

Chris Kehoe, on behalf of BBRC



Male 'Black-headed Wagtail' *Motacilla flava feldegg*. Dan Powell

Throughout the past 100 years or so, interest in the racial identification of bird species has blown hot and cold. Many of today's familiar species were first described during the nineteenth century and, as interest in new forms grew, many collectors became increasingly eager to describe and name new species. Inevitably, many 'species' were described based on minor variations among the specimens collected. As attitudes towards what constituted a species changed, many of these newly described species were subsequently amalgamated as subspecies, or races (the terms 'subspecies' and 'race' are treated as synony-

mous in this paper), of a single, wide ranging species. The ground-breaking *Handbook of British Birds* (Witherby *et al.* 1938–41) was the first popular work that attempted a detailed treatment of racial variation within the species it covered and promoted a positive approach to the identification of many races. However, as the emphasis on collecting specimens was replaced by the development of field identification skills, interest in the racial identification of species waned.

Since the 1970s, and particularly in the last ten years, improvements in the quality and portability of optics, photographic equipment

and sound-recording equipment have enabled birders to record much more detail about the appearance of birds in the field, and this has been an important factor in a major resurgence of interest in racial identification. At the same time, new techniques and approaches in taxonomy and systematics have promoted many forms previously thought of as races to full species, which has created additional interest from birdwatchers.

This article discusses BBRC's approach to the recording and assessment of rare races of species that would otherwise not fall within the Committee's remit. Some of these races (for example 'Siberian Stonechat' *Saxicola torquatus maurus*) have traditionally been assessed as rarities, but a complete list of the races that qualify as national rarities has not previously been published. We hope that this document will clarify what has sometimes been a rather grey area, and also that it will explain some recently published decisions relating to certain forms.

What is RIACT?

Many extralimital races of common species have already occurred in Britain, and doubtless more will be discovered over time. Furthermore, some taxa currently treated as races might eventually be promoted to species status, and this in particular prompted BBRC to set up RIACT (Race Identification Amongst Changing Taxonomy) in 1999, a subcommittee with the aim of establishing criteria for the identification and assessment of races. Initially, work focused primarily on rare species already being considered by BBRC, such as the races of Black-eared Wheatear *Oenanthe hispanica* and Isabelline Shrike *Lanius isabellinus*. Some of the work undertaken on these forms has already been published in BBRC annual reports, and it is intended that more will follow. RIACT's work has now expanded to review those races of commoner British species which are considered to be rare in a British context, or those which may be elevated to species status by the BOURC's Taxonomic Sub-committee, and this paper stems from that research.

Scope

It is not the intention to review all of the rare races that could potentially occur in Britain. Those discussed below include all those that have previously been recorded in Britain (and are included on the British List), and a wide

selection of others suspected of occurring but not yet confirmed. Any races not listed here are either deemed too common to be assessed at national level, or would represent a 'first' for Britain. Appendix 1 lists several races that, although recorded only rarely, are assumed to be too regular to warrant the label of rarity; in most cases, they are just too subtle to be detected and therefore presumably go unnoticed. A current list of accepted species and races on the British List up to 1st April 2006 can be found in Dudley *et al.* (2006) or online at <http://www.blackwell-synergy.com/doi/full/10.1111/j.1474-919X.2006.00603.x>

As intimated above, BBRC is also interested in the races of a number of rarities that may be diagnosable in the field.

Diagnosability

By their very nature, races tend to be subtle entities, but the degree of subtlety varies. At one extreme are distinctive races that seem to be as easily recognised as many full species (and in some cases these may ultimately be elevated to species level). At the other extreme are races that seem to be so poorly defined that it is questionable whether their status is justified, let alone whether their identity might be reliably confirmed if they were to occur out of range. Moreover, some individuals of a particular race may be readily diagnosed while other individuals may be effectively indistinguishable from other races. It is often the case that we simply do not know how, or even whether it is possible, to diagnose individuals of a particular race accurately in a vagrant context. Factors such as individual variation, intergrades and aberrant forms have not yet been fully researched in many cases.

Diagnosability is the key issue when it comes to recording rare races; more specifically, the degree of confidence with which an individual showing features suggestive of a particular race can be identified as *being* of that race is crucial. Historically, BBRC reported records of rare races as 'showing characters of' the race in question. Implicit within that statement is a caveat that although the individual showed all or most of the characters of the race in question, and no contrary indications, there was still an element of doubt as to whether it truly originated from the geographical area of the race in question. The degree to which such a caveat was required varied. Although we do not propose to continue

using this caveat for individual races, we will use it as a holding category for some difficult 'groups' where individuals cannot currently be assigned to an individual race with confidence (e.g. 'Eastern Lesser Whitethroats' *Sylvia curruca*).

When considering racial identification, the 'Geographical Variation' section in *BWP* makes essential reading. Many identification papers and species or family monographs provide further guidance. For passerines, Svensson (1992) provides an unparalleled guide to European passerine identification in the hand and for many species presents in-depth treatment of racial identification, although it is interesting to note how the treatment of certain forms differs from that found in, for example, *BWP*. In this report, we have listed (in parentheses at the end of the text for each species group) some of the key references available for many of the races discussed.

A word of caution about descriptions in the literature is that when describing differences between races, there is a (perfectly understandable) tendency for authors to concentrate on those characters that typify, or enable separation of, different populations. They rarely touch on the extent of variation, or the degree of overlap with other races, which are key considerations when examining a potentially extralimital vagrant. The degree of individual variation and the extent to which this, or intergrades between adjacent races, may produce something that could masquerade as a vagrant must always be a consideration. BBRC will continue the approach, already in place for some races, of accepting only 'classic' individuals (e.g. of 'American Herring Gull' *Larus argentatus smithsonianus*). We freely acknowledge that in continuing with this policy, some valid records may be found not proven, but we feel that we can accept only those individuals that clearly fall outside the range of variability of the commoner races.

In view of the uncertainties implicit in the recording of rare races, BBRC intends to introduce a system of 'informal reporting', so that observers who suspect that they have encountered an extralimital form can submit information to the Committee without fear of the record being rejected. Access to such informal reports will prove a valuable resource to RIACT as we strive to develop working criteria for identification and assessment. In some cases,

such submissions may ultimately be accepted as the form in question, in others they may reinforce the need to take a cautious approach. Observers will be kept informed of any progress made on particular issues, and we recognise that dialogue with observers is in itself a valuable tool as we try to establish whether certain forms can be effectively identified and recorded.

Of course, work on the development of criteria for judging claims should not be left to BBRC alone, and we encourage observers to help us in clarifying diagnosability issues; we much prefer to receive submissions where the observers have presented a well-researched case to support their conclusions.

The evidence required – field notes, photographs, sound recordings, biometrics, ringing recoveries and tangible proof of origins

For many of the races listed here, details are given of the type of evidence required to support claims. To save endless repetition, it can be assumed that one or more of the three basic types of evidence (a detailed field description, good photographs and a sound recording) is a minimum requirement in most cases. The value of examining birds in the hand will be apparent from the stated requirements for biometrics in several of the following accounts – although even for species where biometrics are useful in helping to separate races, some or even many individuals may fall into a zone of overlap. Claims of a rare race which originate from a trapped bird should be accompanied by full biometrics, similar to those required for a national rarity, ideally checked by another competent ringer and accompanied by in-hand photographs. If any body feathers are dislodged during the ringing process, these should be preserved in case molecular analysis is possible or relevant. It is important to emphasise that deliberate removal of feather samples requires a Country Agency licence, and ringers should contact the BTO Ringing Unit in the first instance. In some cases, a ringing recovery will be the most likely way to confirm a suspected vagrant race. This is often referred to below by the phrase 'tangible proof of origins', although there may be instances where molecular analysis of feather samples (for example using stable isotope analysis) can also confirm the origins of a bird, so this also qualifies as 'tangible proof'. A table which summarises the evidence required for both formal and informal submissions can

be downloaded at www.bbrc.org.uk/riactsummarytable.htm

Updates

This list and the details it contains are not set in stone. Some forms currently considered safely diagnosable may be found to be more complex and difficult to separate than imagined, while new research may indicate that other forms thought difficult or impossible to identify are actually diagnosable after all, at least in some cases. This paper will be available online at the BBRC website (www.bbrc.org.uk), and regular

updates to individual species accounts will be made there as appropriate; periodic reviews will be published in *BB* from time to time, once a significant mass of new information is available. We very much welcome informed comments that may lead us to adjust our approach to the recording of these forms. BBRC will consider any claims of the races described below from 1950 onwards, but will require the level of detail outlined here (and in the table on our website) to ensure acceptance and publication in the annual report.

Races to be considered by BBRC

Bewick's Swan *Cygnus columbianus columbianus*, 'Whistling Swan'

There are two accepted records of this North American race. Claims must contain precise details (ideally photographs) of the amount of yellow on the bill, preferably including the underside. We have no evidence that European and West Siberian *C. c. bewickii* ever shows a bill pattern matching that of classic *columbianus*: all-black except for a small yellow spot in front of the eye similar in size to, but often more elongated than, the eye.

Intergradation between *bewickii* and *columbianus* has reportedly occurred in Siberia since at least the early 1970s, although the extent of this is unclear. A few reports of birds with apparently intermediate bill patterns in Europe and elsewhere may refer to intergrades, or perhaps just extreme variation within *bewickii*. Only birds with bills which match the classic *columbianus* pattern are likely to be acceptable, but we welcome images of potential intergrades as informal reports. Minor structural differences between the two forms exist, but individual variation means that this is at best a supporting feature. A potential pitfall concerns birds with mud on the bill, reducing the apparent amount of yellow.

Escapes of *columbianus*, and also the larger, but essentially similar Trumpeter Swan *C. buccinator*, have occurred. Descriptions should indicate how the latter was excluded through reference to size, structure and bare-part (face pattern) details. (Evans & Sladen 1980; Madge & Burn 1988; Kemp 1999; Syroechkovski 2002; Sangster *et al.* 2004)

Bean Goose *Anser fabalis johanseni*, *A. f. middendorffii* and *A. f. serrirostris*

Although birds of eastern origin have been suspected in Britain, there have been no confirmed records. These three races breed to the east of the two familiar European forms, 'Taiga Bean Goose' *A. f. fabalis* and 'Tundra Bean Goose' *A. f. rossicus*. In the taiga zone, the range of nominate *fabalis* grades into that of *johanseni*, which in turn grades into that of the conspicuously large-billed *middendorffii*. Across the tundra, north of these three races, *rossicus* grades into *serrirostris*; some of the latter have a very large bill but, since variation is clinal, these two races are sometimes regarded as synonymous.

Further studies are required to establish consistent morphological characters to separate the eastern forms. Probably the most likely to occur here, but also perhaps the most difficult to identify, is *johanseni*, which winters in eastern parts of the Western Palearctic. Biometric data or a ringing recovery might well be required to confirm the identity of the eastern races, but images of birds resembling these forms are welcomed as informal reports. (Madge & Burn 1988)

White-fronted Goose *Anser albifrons frontalis*, *A. a. elgasi*, *A. a. gambelli* and *A. a. albicans*

Only *A. a. albifrons* from northern Europe and western Siberia and *A. a. flavirostris* from Greenland are on the British List. The diagnosability of potential vagrant races has been poorly studied, though quite large differences exist in biometrics and structure and, more subtly, in plumage and bill colour.

Biometric data or a ringing recovery would be the ideal evidence of extralimital forms, but field observations, if accompanied by detailed notes and, preferably, photographs would be welcome as informal submissions. (Palmer 1976; Madge & Burn 1988; Kaufman 1994; Ely 2005; Reid 2006)

Greylag Goose *Anser anser rubrirostris*

Birds that resemble *rubrirostris* have been recorded in Britain but their status is unclear, and this eastern race is not on the British List. Birds from the reportedly wide intergrade zone between nominate *anser* and *rubrirostris* pose a potential identification pitfall, but may be no more likely to occur than genuine *rubrirostris*. Introduced populations of *rubrirostris* on the near continent have apparently now been 'genetically swamped' by local *anser* populations, but it is not known whether ancestral characters could reappear in offspring hatched several generations later.

BBRC welcomes reports of birds showing characteristics of *rubrirostris* (e.g. large individuals with typically broader pale fringes to upperparts and wholly raspberry-pink bills) with images confirming the key characters. The reporting of known or obvious escapes is an important means of monitoring the status of this race. (Owen *et al.* 1986; Madge & Burn 1988)



Martin Garner

348. Greylag Goose *Anser anser*, Salthouse, Norfolk, October, 2006. This bird shows the classic raspberry-pink *rubrirostris* bill, but the body plumage was only marginally paler than that of the accompanying nominate Greylags, suggesting that the bird was not pure *rubrirostris*.

Snow Goose *Anser caerulescens caerulescens*, 'Lesser Snow Goose', and *A. c. atlanticus*, 'Greater Snow Goose'

The status of Snow Goose is extremely difficult to establish because of the ever-present spectre of escapes from waterfowl collections or wandering feral birds, but this species is possibly a scarce rather than rare visitor to Britain. However, the constituent races of Snow Goose seem more likely to occur at levels that would make them rarities. A detailed description, and preferably photographs, should be submitted of any individual that can be racially identified. Details should be submitted of potential vagrants only – i.e. those with flocks of wild geese or, perhaps, small flocks in spring or early summer away from known feral populations. (Madge & Burn 1988; Sibley 2000)

Greater Canada Goose *Branta canadensis canadensis*, 'Atlantic Canada Goose', *B. c. interior*, 'Todd's Canada Goose'/'Interior Canada Goose' and *B. c. parvipes*, 'Intermediate Canada Goose'

'Canada Goose' was split into two species by BOURC in 2005 following the same decision by the AOU. It is on the British List only as a category C species, represented by *B. c. canadensis* – i.e. the long-established, introduced and naturalised population. All three taxa listed here are potential vagrants and individuals showing characters of both *interior* and *parvipes* have been recorded in Britain in an apparently wild state. BBRC is in the process of establishing key criteria for identifying each form. Observers are encouraged to submit full details, particularly of size, structure and plumage tones, and preferably with photographs, of individuals in circumstances suggesting wild origin (e.g. with other

wild geese). Knowledge on identification is still incomplete and taxonomic issues are evolving as new information, from both breeding and wintering grounds, emerges. (Fox *et al.* 1996; Kristiansen *et al.* 1999; Batty & Lowe 2001; Batty *et al.* 2001; Berlijn *et al.* 2002; Hanson 2005; www.oceanwanderers.com/CAGO.Subspecies.html)

Lesser Canada Goose *Branta hutchinsii hutchinsii*, 'Richardson's Canada Goose'/'Hutchins' Canada Goose', *B. h. taverneri*, 'Taverner's Canada Goose' and *B. h. minima*, 'Cackling Canada Goose'

This species is not yet on the British List, but *hutchinsii* is clearly a potential vagrant and individuals showing characteristics of this form have been recorded in Britain. The status of *taverneri* and *minima* is clouded by the question of their likely natural vagrancy, escape possibility and, particularly in the case of *taverneri*, identification. BBRC is attempting to establish identification criteria for each form; and details of suspected Lesser Canada Geese should be submitted as described for the preceding species.

Brent Goose *Branta bernicla*

'Grey-bellied Brant', a somewhat intermediate- (and variable-) looking population from the Canadian High Arctic (and at present not a formally recognised race), has been suspected in Britain, usually with 'Pale-bellied Brent Geese' of Canadian origin but on at least one occasion with 'Dark-bellied Brent Geese' on the English east coast. BBRC is reviewing the diagnosability of this difficult form in a British context; any submissions will be treated as informal reports initially, and photographs are essential supporting evidence. (Madge & Burn 1988; Garner 1998; Garner & Millington 2001; Buckley & Mitra 2003; Hutt & Taylor 2006; www.oceanwanderers.com/IntrmBrantNY.html)

Common Eider *Somateria mollissima dresseri*, 'American Eider', and *S. m. borealis*, 'Northern Eider'

Various extralimital taxa could occur in Britain; at present, claims of only adult or near-adult males are sought, but submissions of birds in other plumages will be kept on file pending further research.

There are no accepted British records of the distinctive North American *dresseri*, although one claim is under consideration. Possibly, intergrades with *borealis* may pose problems, so only individuals that show all the characters of *dresseri* and no anomalous features are likely to be acceptable.

The Arctic-breeding *borealis* is on the British List based on biometric evidence from a tideline corpse; there have been several other claims, which are currently in circulation. The status of *borealis* in Britain is unclear, and it may even be a scarce rather than rare migrant, the occurrence pattern of which has been clouded by diagnosability issues and past neglect. We are particularly keen to receive claims with biometric support, but research into the practicalities of assessing *borealis* based solely on field observations is ongoing. Bill colour alone is not necessarily diagnostic of the race *borealis*, as British *mollissima* frequently exhibit bright mustard tones on the bill, and many *borealis* (especially birds from the eastern part of the range) have unexpectedly dull bills and overlap with *mollissima*. The presence of prominent pointed 'sails' (which occur frequently in *borealis*) may exclude *mollissima*, though research on this topic is ongoing. However, the combination of bright orange at the bill base and prominent scapular 'sails' may prove to be diagnostic. Submission of photographs and field notes of any suspected *borealis* in Britain is encouraged. (Madge & Burn 1988; Garner & Farrelly 2005)

Red-necked Grebe *Podiceps grisegena holboellii*, 'Holboell's Red-necked Grebe'

This North American and northeast Asian taxon is on the British List based on a single specimen record which pre-dates BBRC; there are also at least five records for Iceland.

Biometric differences are diagnostic, with *holboellii* being distinctly larger than nominate *grisegena*; average bill and wing lengths fall largely beyond the maximum of *grisegena*. Biometric details are currently required for acceptance. A further distinction is the bill pattern of breeding birds – *holboellii* typically has extensive yellow on the lower mandible – but this may be only an average character and may be partly age-related; more research is required. Images of birds in breeding plumage with extensive yellow on the lower mandible would be welcomed. (Ogilvie & Rose 2002; McGowan 2006)

Cory's Shearwater *Calonectris diomedea diomedea*, 'Scopoli's Shearwater'

'Scopoli's Shearwater' is not on the British List, although one claim is currently being considered by BOURC and others have been suspected. Work to establish reliable and consistent assessment guidelines is ongoing, as knowledge of the key features of this Mediterranean form, and of variation within *C. d. borealis* populations, develops. There may be some degree of mixing between *diomedea* and *borealis*, and there is evidence of *borealis* breeding in the Mediterranean (Martinez-Abraín *et al.* 2002). In the short term, claims should be accompanied by good-quality images showing the vital underwing-pattern. (Gutiérrez 1998; Martinez-Abraín *et al.* 2002; Fisher & Flood 2004)

Great Cormorant *Phalacrocorax carbo lucidus* and *Ph. c. maroccanus*

Neither of these African taxa is on the British List, although a recent claim of *maroccanus* is under consideration, and others have been suspected; work on practical assessment guidelines is underway, but detailed notes and photographs will be a minimum requirement. Both *maroccanus* and *lucidus* are rather distinctive races and are unlikely to have been overlooked, but occasional (aberrant?) individuals of the two European breeding forms, *carbo* and *sinensis*, may superficially resemble either of these white-faced North African races. Differentiating between *lucidus* and *maroccanus* should be straightforward with good views, but intergrades do occur and some may be acceptable only as *maroccanus/lucidus*. (Alström 1991)

Shag *Phalacrocorax aristotelis desmarestii* and *Ph. a. riggenbachi*

Neither *desmarestii* of the Mediterranean basin nor *riggenbachi* from coastal Morocco is on the British List. Immatures show marked differences in the colour of the underparts compared with young nominate *aristotelis*. A small proportion of birds fledged in Britain appear similar, however, and such birds perhaps account for a few suspected occurrences of the southern races in Britain. Minor average differences in facial pattern and structure exist but biometric data are likely to be a minimum requirement for acceptance (*desmarestii* is notably smaller and most should be identifiable on biometrics). Nonetheless, photographs of suspected *desmarestii* or *riggenbachi* would be welcome for reference purposes. (Flumm 1993; Brown 2004)

Night Heron *Nycticorax nycticorax hoactli*

This North American taxon is not on the British List. Biometrics are the safest means of identification, but some adults can also be identified by facial pattern. Images of suspected *hoactli* are welcomed but formal submissions should contain biometrics. (Hancock & Kushlan 1984)

Great White Egret *Ardea alba egretta*, 'American Egret'

This common and widespread North American taxon is not currently on the British List. However, it is a likely vagrant and a few claims are under consideration. Differences in bare-part colours between European nominate *alba* and *egretta* do exist but may be only average differences, and efforts to establish practical identification and assessment guidelines are underway; biometrics are diagnostic, however. Other races (all of which, like *egretta*, are smaller) could conceivably occur; e.g. *A. a. modesta* has been claimed elsewhere in Europe. The issue of the natural vagrancy of other races would be a point of contention and further investigation. Descriptions and images depicting any particularly small birds, or birds with *egretta*-like bare-part colours or aigrettes are welcomed as informal reports. (Hancock & Kushlan 1984)

Hen Harrier *Circus cyaneus hudsonius*, 'Marsh Hawk'

This North American taxon is not on the British List, though some (previously not accepted) claims have been reviewed recently by BBRC, and one is now being considered by BOURC. Extant claims refer to birds in juvenile plumage, and future submissions of juveniles should include precise details of the head, underparts and underwing pattern, preferably with supporting photographs. Adult males seem to be the most easily diagnosable and adult females seem to be the most difficult category to separate. (Grant 1980, 1983; Riddiford 1983; Thorpe 1988; Wheeler & Clark 1995; Wallace 1998; Ferguson-Lees & Christie 2001)

Northern Goshawk *Accipiter gentilis atricapillus*

There is one accepted record of this North American taxon. We know of no safe means of diagnosing this race in the absence of biometrics or a ringing recovery, and only submissions containing such evidence are sought. It is possible that even biometric or molecular data may be compromised by the presence of *atricapillus* genes within the introduced UK population, although this requires confirmation. (Forsman 1999; Ferguson-Lees & Christie 2001)

Common Buzzard *Buteo buteo vulpinus*, 'Steppe Buzzard'

This strongly migratory taxon, which breeds in eastern Europe, was recently removed from the British List after the single accepted (specimen) record was reviewed. Widespread intergradation between nominate *buteo* and *vulpinus* clouds the identification of this taxon in an extralimital context. Furthermore, a small proportion of *buteo* originating in Britain appear to show some plumage characters normally associated with *vulpinus*, such as distinct rufous plumage tones. Possibly, no plumage characters are fully diagnostic of *vulpinus*, with the possible exception of entirely dark birds, which may not occur within the range of nominate *buteo*.

As well as *Buteo* hybrids, escaped Red-tailed Hawks *B. jamaicensis* present a potential identification pitfall. Full biometrics are essential for acceptance, although a ringing recovery or molecular support would be ideal to confirm *vulpinus* in Britain. At present, we are keen to receive images of birds resembling *vulpinus* in Britain (including any *Buteo* with obviously rufous tones), but claims that lack at least biometric support will not be assessed formally. (Shirihai & Doherty 1990; Forsman 1999; Ferguson-Lees & Christie 2001; Harrop & Collinson 2003)

Rough-legged Buzzard *Buteo lagopus sanctijohannis*, 'Rough-legged Hawk'

There are currently no accepted British records of this small North American form, although it has occasionally been suspected. Dark-phase birds seem to provide the most likely means of recording this form in Britain and current evidence suggests that such individuals do not occur in the European population. Biometrics are diagnostic, but images of suspected *sanctijohannis* (size, structure, perhaps plumage, and in particular location may offer clues) are welcome as informal reports. (Forsman 1999; Ferguson-Lees & Christie 2001; Mullarney & Murphy 2005; Jensen 2006)

Merlin *Falco columbarius columbarius*, 'Taiga Merlin'



349. Adult male 'Taiga Merlin' *Falco columbarius columbarius*, showing the all-important tail pattern to perfection; New Jersey, October 2006.

A previously accepted record is no longer supported by BOURC and was apparently the product of a Meinertzhagen fraud. Photographs would seem to be a prerequisite for claims of suspected *columbarius*, including essential details of the tail pattern. Similarly, we are interested in images of Merlins which show characters inconsistent with the two regularly occurring taxa, European *F. c. aesalon*, and *F. c. subaeson* from Iceland. (Forsman 1999; Ferguson-Lees & Christie 2001; Garner 2002)

Peregrine Falcon *Falco peregrinus calidus*, *F. p. anatum* and *F. p. tundrius*

There are no British records of the Arctic-breeding *calidus*, although several have been suspected. Given its distribution and long-range migratory movements, *calidus* may be expected to occur in Britain, perhaps even as a scarce passage migrant. Currently, we know of no means by which this race can be safely diagnosed in the absence of clear biometric support, and perhaps a ringing recovery. Good-quality images of potential *calidus*, and also of birds apparently different from typical nominate *peregrinus* are welcomed. Note that not all apparently large, pale Peregrines are necessarily *calidus*, or even this species given the presence of falconer's hybrids and backcrosses.

The only previously accepted record of a North American bird (*F. p. anatum*) was recently reviewed and removed from the British List. Immature *anatum* and *tundrius* appear to closely resemble some *calidus*, and there are no known plumage characters which can separate these three races in the field. A ringing recovery is the minimum requirement to confirm the occurrence of the North American races in Britain. (Forsman 1999; Ferguson-Lees & Christie 2001; Harrop 2004)

Dunlin *Calidris alpina sakhalina*, *C. a. hudsonia*

Dunlin of the races *C. a. alpina*, *C. a. schinzii* and *C. a. arctica* occur frequently in Britain, but there are no accepted records of any extralimital taxa. One claim of *sakhalina* is under consideration, and birds of the North American race *hudsonia* have occasionally been suspected. Birds from central northern Eurasia (so-called 'centralis'), which occur regularly in the Baltic and appear to bridge European and Pacific populations, are likely to occur in Britain and may be a new race for the British List as well as a serious identification pitfall with respect to other eastern taxa.

Racial identification of Dunlins is clearly difficult, and we are currently uncertain how extralimital taxa may be confirmed in Britain in the absence of a ringing recovery. Biometric support could enable some individuals to be confirmed as one of several extralimital taxa, but would not necessarily establish which particular race was involved.

Sometimes marked differences in breeding plumage exist among some races, partly as a result of the timing of moult (and consequent levels of abrasion). This also applies among the regular taxa – for example, differences between *schinzii* and *alpina* are magnified in midsummer, which may cause some of the latter to resemble more exotic races. Some plumage characters highlighted in the literature are primarily relevant to adjacent races and do not apply in a European context; for example, the frequently mentioned flank-streaking of juvenile/first-winter *hudsonia* is relevant in relation to plain-flanked Pacific taxa but flank-streaking is not unusual in European birds, though it probably never matches that on more extreme examples of *hudsonia*.

We are keen to receive details, preferably with photographs, of birds felt to show characters of vagrant races. Ringing recoveries of birds from North America or east of the Yamal Peninsula, Arctic Russia, would be of particular interest. (Browning 1977; Greenwood 1984; Hayman *et al.* 1986; Wenink *et al.* 1993; Wenink 1994; Warnock & Gill 1996; Paulson 2005)

Common Snipe *Gallinago gallinago delicata*, 'Wilson's Snipe'

There are currently no accepted records of this North American taxon, but a small number of birds have been suspected (and one is still under consideration; BBRC in prep.). Although there are quite marked average plumage differences between *delicata* and nominate *gallinago*, individual variation in the latter is significant and suspected *delicata* will be extremely difficult to prove without reference to fine details of tail structure and pattern. A BBRC paper outlining acceptance criteria and providing a review of past claims is in prep. Future claims should be accompanied by good images of the underwing and tail, together with a detailed discussion of all aspects of appearance (preferably including tail structure though it is acknowledged that this is difficult to see and assess). (Leader 1999; Legrand 2005)

Whimbrel *Numenius phaeopus hudsonicus* and *N. p. variegatus*

BBRC has routinely assessed claims of the North American *hudsonicus* and there are just four accepted records. Detailed field notes, preferably supported by photographs, are required for claims of this distinctive race.

East Asian *variegatus* has occasionally been suspected in Britain. Typical *variegatus* generally



'Hudsonian Whimbrel' *Numenius phaeopus hudsonicus*

resemble nominate *phaeopus*, although they are more variable in appearance. Some juveniles show quite extensively dark rumps, and thus resemble *hudsonicus*, while others display a similar extent of white to *phaeopus*, but most fall somewhere between these two extremes. More work is needed on the diagnosability of *variegatus*, and also on the variation within *phaeopus*. We encourage informal reports with good photographs of birds in Britain showing *variegatus*-like traits. (Hayman *et al.* 1986; Doherty 1990; Bosanquet 2000; Paulson 2005)

Eurasian Curlew *Numenius arquata orientalis*

Although *N. a. orientalis* is not on the British List, it has been suspected here and would appear to be a likely vagrant. Some *orientalis* are quite striking, especially when structural differences, in particular bill length, are at the top end of the range, beyond those of nominate *arquata*. Actually proving one will, however, be difficult as plumage variations within nominate *arquata* mean that it overlaps in appearance with *orientalis*, and the existence of a potentially broad zone of intergradation around the Ural Mountains seems certain to add to identification difficulties.

The possibility that a set of diagnostic plumage, moult, and structural characters might allow some *orientalis* to be identified in the field cannot be ruled out, but early research is not encouraging; it might never be possible to fully rule out intergrades. It would be interesting to see biometrics of exceptionally large Eurasian Curlews in Britain or ringing evidence indicating an origin to the east of the Urals. Images of suspected *orientalis* would be similarly welcome, for reference purposes. (Hayman *et al.* 1986; www.birdguides.com/birdnews/article.asp 22.07.2004)

Turnstone *Arenaria interpres morinella*

This North American taxon is not on the British List, though it has been suspected here. Some male *A. i. morinella* in breeding plumage may be noticeably brighter and whiter-crowned than typical male nominate *interpres*, but differences are subtle and possibly inconsistent. Some biometrics may be indicative, especially wing:bill:tarsus ratios (*morinella* has relatively shorter wings and longer bill and tarsus) but there is no single diagnostic measurement. A ringing recovery would confirm its occurrence, but biometrics and photographs of suspected *morinella* would be welcome as informal reports. (Hayman *et al.* 1986)

Long-tailed Skua *Stercorarius longicaudus pallescens*

One previously accepted record of this race, which breeds in North America, Greenland and eastern Siberia, has recently been removed from the British List as it was apparently the product of a Meinerzhagen fraud. The status of *pallescens* is unclear and clouded by diagnosability issues; current evidence suggests that there are only average differences in the appearance of adults and that nominate *longicaudus* in Scandinavia occasionally match the characteristically pale-bellied appearance of

pallascens (contra *BWP*). Conceivably, such individuals are *pallascens* breeding outside their usual range, but there is sufficient reason to doubt that even an extensively pale-bellied appearance is unique to *pallascens*. There are no published differences in non-adult plumages and perhaps no conclusive biometric differences, although *pallascens* may be longer-winged. Claims are not sought unless supported by tangible proof of origins, but images of Long-tailed Skuas that show the classic pale-bellied appearance of adult *pallascens* are welcomed for reference purposes; the occurrence of pale-bellied birds in Britain seems to be genuinely rare. We would also welcome details of birds with a wing length in excess of the published range of nominate *longicaudus*. (Olsen & Larsson 1997)

Common Gull *Larus canus heinei*, *L. c. kamtschatschensis*, 'Kamchatka Gull', and *L. c. brachyrhynchus*, 'Mew Gull'

We would like to encourage submission of images and biometrics of birds that are potentially of one of the extralimital races, i.e. adults that are conspicuously large and darker mantled (*heinei* and *kamtschatschensis*), or which show the distinctive wing pattern of *brachyrhynchus*. At present, claims will not be assessed formally unless they refer to classic *brachyrhynchus*. More research is required.

The race *heinei* breeds in Russia, east of nominate *canus*, and is on the British List following ringing recoveries from the breeding range. Without such proof, we believe that *heinei* is not safely diagnosable, owing primarily to the difficulty of excluding intergrades with nominate *canus*. Based on its distribution and movements, it seems likely to be of regular occurrence in Britain and dark-mantled Common Gulls in eastern Britain in winter may well be of this form. The larger *kamtschatschensis* breeds to the east of *heinei*, and is not on the British List but has been suspected here. Some individuals seem distinctive in various plumages but more work is needed to establish whether any combination of characters allows confident identification of extralimital birds. The extent to which eastern *heinei* might closely resemble *kamtschatschensis* is unclear, as is the extent to which the two might intergrade. The distinctive North American *brachyrhynchus* has been suspected but is not on the British List. Exceptionally, the characteristic wing pattern of adult *brachyrhynchus* can be suggested by rare variant *canus*, and a full range of plumage and structural characters, with good photographs, will be a prerequisite for an acceptable record of the American form. (Shepherd & Votier 1993; Carey & Kennerley 1996; Olsen & Larsson 2003)

Lesser Black-backed Gull *Larus fuscus fuscus*, 'Baltic Gull'

'Baltic Gull' is on the British List on the basis of a ringing recovery from the breeding range. Many older published records pre-date the recognition of the commonly occurring *L. f. intermedius*, and are no longer acceptable.

Quite marked average differences exist between nominate *fuscus* and the other races (especially *L. f. graellsii*), although many *intermedius* appear closer to nominate *fuscus* than to British *graellsii*. In recent years, differences in moult have been highlighted; although it is acknowledged that some moult characteristics attributed to *fuscus* may not now be unique, certain moult patterns and resulting plumages are very unusual among *intermedius* but typical of *fuscus*. However, the problem of intergrades further confounds matters. At present, BBRC does not consider this taxon safely diagnosable in a vagrant context without tangible proof of origins, most likely a ringing recovery. For reference purposes, however, we seek details of suspected *fuscus* when these include good images and supporting moult analysis. Based on its distribution and movements, it seems possible that *fuscus* is, or at least once was, a scarce migrant rather than a true rarity. (Jonsson 1998; Olsen & Larsson 2003; Gibbins 2004; Altenburg *et al.* 2006; Koskinen & Rauste 2006; Winters 2006a)

Yellow-legged Gull *Larus michahellis atlantis*, [*L. m. 'lusitanicus'*], [*L. m. 'cantabricans'*], 'Atlantic Yellow-legged Gull'

There are no British records of birds of the subtle west Iberian and Atlantic island races (some of which are of disputed validity), although reports of potential ringing recoveries are being investigated (e.g. a third-calendar-year bird from the Berlenga Islands, Portugal, controlled at Gloucester). Individuals from the highly pelagic population in the Azores can appear quite distinctive, and have been suspected in Britain. Photographs and detailed notes of such birds would be welcomed as informal reports.

Herring Gull *Larus argentatus cachinnans*, 'Caspian Gull', and *L. a. smithsonianus*, 'American Herring Gull'

Records of *L. a. cachinnans* were assessed by BBRC up to 2000, by which time it was clear that Caspian Gull is a scarce visitor to Britain, not a true rarity. In future, it is planned that records of *cachinnans* will be monitored through the Scarce Migrants Report. A paper covering the identification of 'Caspian Gull' and its assessment at regional/county level is in preparation.

BBRC has routinely assessed claims of the North American *smithsonianus*, and there are currently ten accepted records. BBRC policy is to accept only individuals that show the full suite of features characteristic of the most distinctive birds. Inevitably, this means that some genuine *smithsonianus* will slip through the net but we believe that our approach is preferable to one of adopting a more lenient stance that would allow for the acceptance of not-infrequent look-alikes. Birds resembling *smithsonianus*, particularly first-years with dark tails, occur regularly in the European Herring Gull population; these are perhaps most likely to be *L. a. argentatus* from Arctic colonies, and represent a significant identification pitfall. Photographs of a potential *smithsonianus* help record assessment considerably and, of all the relevant plumage features for separating *smithsonianus* from similar-looking *argentatus*, the patterns on the rump and vent may be especially useful.

At present, only first-years have been accepted, as the few claims of older birds are awaiting clarification of the diagnosability of other age classes. A further potential pitfall may involve darker examples of Glaucous Gull *L. hyperboreus* × Herring Gull hybrids. (Olsen & Larsson 2003; Loneragan & Mullarney 2004; Adriaens & Mactavish 2004)

Other large white-headed gull taxa

Tangible proof of origin is required to confirm the identity of any large white-headed gull taxa not listed above, including 'Heuglin's Gull' *L. a. heuglini* and the form *barabensis*, which is of uncertain taxonomic affinity. Nonetheless, we encourage observers to submit photographs and detailed notes of birds which potentially belong to such races, as informal reports.

Little Tern *Sternula albifrons antillarum*, *S. a. athalassos* and *S. a. browni*

There is one accepted record of a bird from the North American 'Least Tern' group. A combination of voice and relevant plumage detail, in particular rump and tail colour, is required to confirm identity. Submissions should ideally contain photographs, while sound recordings are currently a prerequisite for acceptance. Since there appears to be no way to differentiate the North American races in a vagrant context, records will continue to be published as *antillarum/athalassos/browni* for the time being. (Olsen & Larsson 1995)

Black Tern *Chlidonias niger surinamensis*, 'American Black Tern'

There is currently one accepted British record of this North American taxon. Identification in all plumages, but especially of juveniles, is often relatively straightforward. Submissions should contain detailed notes on all aspects of appearance and preferably photographs. (Olsen & Larsson 1995; Adriaens 1999; McGeehan 2000; Andrews *et al.* 2006)

Sandwich Tern *Sterna sandvicensis acuflavida*, 'American Sandwich Tern'

Ringed recoveries confirm that this North American race has occurred in Britain at least twice, suggesting that it probably occurs more frequently; diagnosability issues may be clouding its true status here. In addition to size differences (*acuflavida* is distinctly smaller than the nominate), there are subtle plumage and phenological differences, but in the absence of ringing/molecular data only informal reports of *acuflavida* are encouraged at present; these should contain photographs and a detailed discussion of the identification. (Olsen & Larsson 1995)

Barn Owl *Tyto alba guttata*, 'Dark-breasted Barn Owl'

This taxon is on the British List, and its occurrence has been confirmed by ringing data. The recent report that a pair of typically pale, British *T. a. alba* reared a dark, *guttata*-like chick complicates identification matters (French 2006); it seems that simply looking like *guttata* is not definite proof of

origins, although we believe that the overwhelming majority of dark birds, especially those on the east coast and in the Northern Isles during migration periods, are likely to be *guttata*. We urge observers to submit further evidence of apparently normal *alba* rearing *guttata*-like young so that we can better understand this phenomenon in Britain. Apart from the problem of unusually dark *alba*, there is overlap between the palest *guttata* and darkest *alba*, meaning that only darker *guttata* (predominantly females) are reasonably safely diagnosable, while pale *guttata* may be overlooked.

BBRC proposes to assess all claims of this continental race forthwith, and will publish all records of birds resembling classic *guttata*, with the caveat that some might be unusually dark *alba*. Detailed notes and, where possible, images are required to support claims. We shall not review older, locally published records unless requested to do so and photographs are available. (Mikkola 1983; Osborn 1999; French 2006)

Common Swift *Apus apus pekinensis*, 'Eastern Common Swift'

This Asian taxon is not on the British List but has occasionally been suspected in Britain. There are still considerable gaps in our knowledge of the movements and identification of these swifts. Until the situation is clearer, only a ringing recovery from the core range of *pekinensis* or molecular support is likely to confirm this subtle taxon in a vagrant context. We welcome good photographs of suspected *pekinensis* as informal reports. (Lewington 1999; Corso 2000)

Great Spotted Woodpecker *Dendrocopos major pinetorum*

There are no British records of *pinetorum* from the near continent but some were suspected during the invasion of 1962. In the absence of a ringing recovery, how individuals of this race may be safely distinguished from, for example, *pinetorum* × *major* intergrades (or even some variant British *D. m. anglicus*) is unclear; biometrics may help (but see Odin 2006). Claims of *pinetorum* should be supported by biometrics and photographs of the trapped bird. These will be treated as informal until assessment criteria are investigated further. The Scandinavian *D. m. major* is regarded as a scarce rather than rare migrant to Britain (Appendix 1).

Short-toed Lark *Calandrella brachydactyla*

Although birds of both southern and eastern origin are assumed to occur, racial identification beyond the breeding range is fraught with difficulty. Short-toed Larks in Britain will continue to be regarded as being of undetermined race, and claims of particular races are not sought at present. A ringing recovery would be the best way to establish geographical origin (and race, or racial group) of British migrants. Nonetheless, we welcome good-quality photographs of birds in Britain (and indeed full biometrics of any birds trapped) for our files, and as new information emerges it may be possible to establish to which racial grouping some individuals belong.



350. 'Dark-breasted Barn Owl' *Tyto alba guttata*, Reawick, Shetland, January 2005.

Hugh Harrop

Shore Lark *Eremophila alpestris*

There are no accepted British records of birds of extralimital origin but at least one individual of suspected North American origin, showing characters closest to *E. a. alpestris*, has occurred. Until diagnosability issues are investigated further, only informal claims, with photographs, are requested. (Garner 1999; Pétursson & Ólafsson 1999; Small 2002)

Barn Swallow *Hirundo rustica transitiva* and *H. r. erythrogaster*, 'American Barn Swallow'

Birds resembling *transitiva*, from southeast Europe, and *erythrogaster*, from North America, have been suspected in Britain. It seems that *transitiva* differs from British *rustica* only in the intensity of colour on the underparts. The vagrancy potential of the former is obscured by the not-infrequent presence of *transitiva*-like individuals during spring migration in Britain, which appear to be variants within the west European population. Consequently, on current knowledge, a ringing recovery or molecular data would be needed to prove the occurrence of *transitiva*.

The North American *erythrogaster* is rather distinctive and consistent in appearance. Differences relate to the head and underparts, with *erythrogaster* lacking the dark band below the chestnut throat. Although *rustica* may (rarely) resemble *erythrogaster* – e.g. some juvenile *rustica* may show a weaker, broken breast-band – such resemblances are superficial, and carefully observed *erythrogaster* should be identifiable in a majority of cases. Claims should be supported by detailed notes and, ideally, images and we welcome photographs of unusual-looking birds for our files. (Turner & Rose 1989; Sibley 2000; Jiguet & Zucca 2005)

Yellow Wagtail *Motacilla flava feldegg*, *M. f. cinereocapilla*, *M. f. iberiae*, *M. f. simillima*, etc.

Only *M. f. flavissima*, *M. f. flava* and *M. f. thunbergi* are considered to be regular visitors to Britain, and all other races are vagrants. Of these, only *feldegg* has traditionally been assessed by BBRC, although several other forms are on the British List and others have been suspected of occurring. Owing to individual variation and racial intergrades at their range boundaries, positive racial identification is sometimes extremely difficult. Well-documented claims (of males only, unless specified otherwise) of the following taxa are encouraged, as are informal reports with photographs of any taxa not listed below. Formal submissions should contain a detailed description, preferably with photographs and a sound recording; for some races, written notes are important to convey subtle plumage colours that may be difficult to capture accurately with a camera.



351. Male 'Black-headed Wagtail' *Motacilla flava feldegg*, South Huish Marsh, Devon, August 2005.

John Carter

'Black-headed Wagtail' *M. f. feldegg*

There are nine accepted records. Acceptance guidelines for males have been tightened following a well-observed bird that was ultimately found not to be acceptable (Rowlands 2003). However, information on individuals which display small anomalies yet otherwise closely resemble *feldegg* should still be submitted; we are keen to monitor the status of birds with potential intergrade characters, which fall into a broader 'Black-headed Wagtail group'. Some darker-headed *thunbergi* also represent an identification pitfall. Many female *feldegg* are rather distinctive and photographs and descriptions of suspected female *feldegg* are welcome. (van den Berg & Oreel 1985; Svensson 1988a,b; Corso 1997; Corso 2001a; Dubois 2001a,b; Alström & Mild 2003; Rowlands 2003)

'Ashy-headed Wagtail' *M. f. cinereocapilla*

This form is on the British List and the evidence indicates that it is a rare visitor to Britain, which suggests that BBRC should assess future records. The extent to which intergrades between other races (i.e. *flava* and *thunbergi* and their backcrosses) might produce birds that suggest *cinereocapilla* is unclear (but is perhaps not a major problem). Of possibly greater concern is the issue of *iberiae* × *cinereocapilla* intergrades, and some birds may be acceptable only as *iberiae/cinereocapilla*. Although accepted records of this taxon will ultimately be published, any claims will be treated informally until diagnosability issues are investigated further. (Dubois 2001a, 2003; Dubois & Roy 2003; Alström & Mild 2003; Nieuwstraten 2004)

'Spanish Wagtail' *M. f. iberiae*

This taxon is not on the British List. An extremely detailed claim, which included high-quality illustrations but which lacked voice details and photographs, has been assessed by BBRC and BOURC; a first for Britain will require all key characters to be covered, including voice. Intergrades are a potential problem but some apparent *flava* can also show quite extensive white on the throat and could be an *iberiae* pitfall. (Dubois 2001a, 2003; Dubois & Roy 2003; Alström & Mild 2003; Winters 2006b)

'Eastern Yellow Wagtail' *M. f. tschutschensis*

The east Asian forms *simillima*, *angarensis* and *zaissanensis* are synonymised with *M. f. tschutschensis* here (and treated as a separate species by some authorities). This form is on the British List, based upon two specimen records, although these are currently under review by BOURC. Some genuinely grey-and-white birds in autumn may be of east Asian origin, although whether individuals of any of the west European or central Asian forms, such as *M. f. beema*, can appear similarly grey and white is unclear. The more buzzy, Citrine Wagtail *M. citreola*-like, calls of this eastern group may help identification but other races (e.g. *feldegg*) also have buzzy calls, which could complicate this issue. BBRC would like to create a photographic and sound archive of such birds, although we shall not assess claims formally at present unless these are supported by photographs, biometrics and/or DNA.

Other races

Two central Asian forms, 'White-headed' *M. f. leucocephala* and 'Sykes's Wagtail' *M. f. beema* are on the British List based on old records that pre-date BBRC. The status of these races is under review by BOURC and results will be published in due course. It is thought likely that most birds resembling *beema* (of which there are many) and *leucocephala* (of which there are few) represent variants of *flava* or intergrades, and that occasional birds resembling the yellow-headed *M. f. lutea* (which is not on the British List) are most likely to be variant *flavissima*. Photographs of birds resembling these races are most welcome, but will be treated informally at present. (Hathway *et al.* 1997; Wallace 1997; Alström & Mild 2003; Vinicombe 2004)

White Wagtail *Motacilla alba leucopsis*, etc.

Apart from *M. a. alba* and *M. a. yarrelli*, all other races of White Wagtail are rarities in Britain. There are no accepted records of other races but one claim of *M. a. leucopsis* is being assessed, while an apparent *M. a. personata* has occurred recently in Norway. We follow Alström & Mild (2003) in considering that *M. a. dukhunensis* is synonymous with nominate *alba*, although we welcome images of

apparent nominate *alba* with extensive white in the wing. Several other forms seem likely candidates for westward vagrancy, and well-documented claims of extralimital forms should be submitted for review. (Alström & Mild 2003; Addinall 2005)

Dipper *Cinclus cinclus cinclus*, 'Black-bellied Dipper'



Hugh Harrop

352. 'Black-bellied Dipper' *Cinclus cinclus cinclus*, Channerwick, Shetland, October 2005.

dark birds which seem to fall short of classic nominate *cinclus* are welcome, especially when accompanied by good photographs.

Common Nightingale *Luscinia megarhynchos hafizi* and *L. m. africana*

There are currently three accepted records of *L. m. hafizi* on the British List. Identification of this central Asian form seems relatively straightforward, but it is believed that a minority of nominate *megarhynchos*, especially first-winters, show some *hafizi*-like plumage traits. Identification should be based on a full set of relevant plumage, structural and behavioural characters, preferably supported by photographs. It is possible that *L. m. africana*, which breeds in western Asia, could also occur in Britain. It is unclear whether *africana* is safely diagnosable in an extralimital context, although it appears to resemble nominate *megarhynchos* rather than *hafizi* in general appearance. Accepted records which do not fully exclude *africana* will be published as *hafizi/africana*. (King 1996)

Black Redstart *Phoenicurus ochruros ochruros/phoenicuroides*, 'Eastern Black Redstart'

BOURC has recently reviewed and rejected four hitherto accepted British records of *P. o. ochruros* and/or *Ph. o. phoenicuroides*, as it was found that none fully excluded the possibility of a Black Redstart × Common Redstart *Ph. phoenicurus* hybrid. BBRC is currently working on a set of robust identification and assessment guidelines by which these 'eastern' Black Redstarts can be safely diagnosed in a British context. New claims are welcome, preferably those supported by good photographs; any ringer handling a potential 'eastern' Black Redstart should collect any feathers lost during processing for molecular analysis. Any images of birds felt to resemble 'eastern' Black Redstarts, even if these are suspected to be hybrids or variants, are welcomed. (Steijn 2005)

BBRC has not previously assessed records of 'Black-bellied Dippers', but we aim to do so at least until status issues are further clarified. Only birds that completely lack any hint of chestnut on the breast are likely to be acceptable, although a limited/narrow brown band is not unusual in this race, while some nominate *cinclus* show a narrow chestnut band at the breast-belly interface. Birds showing chestnut on the underparts probably cannot be distinguished from darker individuals of the British forms *C. c. gularis* and *C. c. hibernicus*, or from *C. c. aquaticus* from central Europe, which has occasionally been suspected here. Informal reports of any unusually



353. First-winter male 'Eastern Black Redstart'
Phoenicurus phoenicuroides, Guernsey, Channel
Islands, October 2003.



354. First-winter male 'Eastern Black Redstart'
Phoenicurus ochruros phoenicuroides, IJmuiden, Noord-
Holland, The Netherlands, October 2003.

Common Redstart *Phoenicurus phoenicurus samamisticus*, 'Ehrenberg's Redstart'

BBRC has routinely assessed claims of *Ph. ph. samamisticus* and there are currently four accepted records. A review of all past records, including those previously not accepted, is in progress and a small number of new claims are being assessed. At present, only males are considered diagnosable. Males differ from those of nominate *phoenicurus* most obviously in showing a white wing-panel in the secondaries and tertiaries; in adults this appears large and extensive, but on some first-winters is restricted to a thin white border on the innermost secondary and outermost tertial, with other tertiaries showing broad buff fringes; such birds are easily overlooked. Accurate ageing and precise details of the wing-panel (exact colour, extent and shape) are essential; photographs and an in-hand description are ideal. Females may not appear particularly pallid, as sometimes suggested, and some fresh female *phoenicurus* show a contrasting pale buff wing-panel, as do some well-marked males of the nominate race. At present, female *samamisticus* appears not safely identifiable, although we welcome images of suspected females.

Some Common Redstart × Black Redstart *P. ochruros* hybrids may resemble *samamisticus* so care is needed to eliminate this pairing; similarly, the possibility of Hodgson's Redstart *Ph. hodgsoni* as a potential escape should be considered.

Common Stonechat *Saxicola torquatus rubicola*, *S. t. maurus/stejnegeri*, 'Siberian Stonechat', and *S. t. variegatus*, 'Caspian Stonechat'

Common Stonechats breeding in continental Europe belong to the form *S. t. rubicola*, which is not formally on the British List. Males in particular have often been suspected here, because birds with subtly brighter and more contrasting plumage than would be expected for British *hibernans* have been seen on suitable dates and in suitable locations for migrants. There are even suggestions of a regular spring passage of *rubicola*-like birds in southern and eastern England, but many birds showing proposed *rubicola* characters refer to breeding males holding territory. Unfortunately, variation among British *S. t. hibernans* and the existence of an intergrade zone on the near continent makes positive identification of *rubicola* extremely difficult, and tangible proof of origins would be required for the first record (one such claim is under review), even though *rubicola* is probably a regular visitor to Britain.

BBRC routinely assesses claims of 'Siberian Stonechat', the vast majority of submissions being of the west Asian form *maurus*. First-winters in fresh autumn plumage are readily identifiable, although a few unusually pale western birds can be superficially similar; consequently, it is important to record the full suite of identification characters, most especially the rump pattern. Spring males, although often striking, are less straightforward and are almost matched in appearance by some brighter, more contrasting western birds, especially presumed *rubicola*. Spring Siberians can still usually be identified by a set of established characters; rump and uppertail-covert pattern is predominant but underwing colour, the extent of the neck collar and breast and flank pattern are very useful (male *maurus* has black axillaries and underwing-coverts and this subspecies probably never shows obviously dark-streaked flanks as many *rubicola* do). Although *maurus* occasionally breeds in Finland, *rubicola* is not known to come into

contact with *maurus* during the breeding season, and the likelihood of intergrades is probably low; nonetheless, photographs of suspected intergrades would be extremely welcome.

Several authors have questioned the validity of the east Asian *stejnegeri*, and it is unclear whether it can be diagnosed with confidence (it differs only subtly from *maurus*, being on average a little darker and with the colours more saturated, rather as *hibernans* is to *rubicola* in the west), and the possibility of a *stejnegeri* × *maurus* intergrade could never be fully excluded. The one accepted British record should be reviewed, and we do not seek further claims of this taxon.

There are currently two accepted records of the west Asian *variegatus*, which displays a particularly distinctive wheatear *Oenanthe*-like tail pattern. Although *maurus* can show limited white at the base of the tail, this never matches the amount shown by *variegatus*, and most *maurus* appear dark-tailed. As *variegatus* is such a distinctive race, we welcome all claims; although the precise tail pattern is best assessed from photographs or in the hand, this is not essential for acceptance. Exceptionally, as for *maurus*, Whinchat *S. rubetra* × Common Stonechat hybrids may superficially recall *variegatus*. More research into potential intergrades between *variegatus* and both *maurus* and *rubicola* is needed, while the race *S. t. armenicus* should also be considered; nonetheless, we feel that it is safe to continue to record birds showing the distinctive appearance of *variegatus*. (Stoddart 1992; Corso 2001b; Walker 2001; Urquhart 2002)

Ring Ouzel *Turdus torquatus alpestris*

One recent claim and four previously accepted records are currently being examined. These are currently listed as *alpestris/amicorum*; perhaps based on misunderstandings about the characters or relationships between the races. We believe *amicorum* to be an unlikely though not impossible vagrant. Separation of the races may not be as straightforward as the literature suggests, and observers familiar with nominate *torquatus* in worn plumage in spring or summer may be surprised by the hoary or scaly appearance of some autumn birds in fresh plumage. Detailed notes and photographs that show the body plumage, in particular the centre of the belly and the undertail-coverts, are required, although in-hand examination is highly desirable and may prove to be a prerequisite for acceptance. (Clement & Hathway 2000)

Cetti's Warbler *Cettia cetti albiventris*, 'Eastern Cetti's Warbler'

This central Asian taxon is not on the British List but one claim is under review. Research to establish the variation within nominate *cetti*, and also the diagnosability of *albiventris* in relation to *C. c. orientalis*, an intermediate form that seems to form a clinal bridge between the eastern and western populations, is ongoing. Biometrics are required to support claims, as the plumage characters of *albiventris* may be replicated in some *orientalis* and perhaps even some nominate *cetti*. Images of Cetti's Warblers with a noticeably cold and grey appearance would be very welcome for reference purposes.

Grasshopper Warbler *Locustella naevia straminea*, 'Eastern Grasshopper Warbler'

There are no accepted British records of this taxon or any other eastern races. Four claims of *straminea* were assessed recently but all were regarded as not proven (BBRC in prep.). Full biometrics are required to support claims, ideally with supporting photographs, but images of any unusually small, grey and heavily streaked Grasshopper Warblers would be valuable for reference.

Reed Warbler *Acrocephalus scirpaceus fuscus*, 'Caspian Reed Warbler'

This eastern race is not on the British List. A number of claims have been assessed recently but none was considered conclusive, even though some contained in-hand images and full biometrics. Owing to variation within nominate *scirpaceus*, as well as *fuscus*, establishing the occurrence of the latter in Britain is thought not possible without tangible proof of origins. Any feathers lost from a suspected *fuscus* during ringing operations should be collected for molecular analysis. (Pearson *et al.* 2002; Votier & Riddington 2005)

Lesser Whitethroat *Sylvia curruca minula*, 'Desert Lesser Whitethroat', and *S. c. halimodendri*, etc.

Although *S. c. blythi* is regarded as an invalid taxon by some recent authors, it is currently listed as a

scarce migrant by BOURC. There are no accepted records of any other Asian races of Lesser Whitethroat, but c. 20 reports of birds of other eastern races stretching back over 20 years are currently awaiting assessment or review, and it is possible that some eastern races may turn out to be scarce but regular visitors to Britain.

The taxonomy and identification of the Lesser Whitethroat complex is a particularly thorny topic. At present, there seems little consistency about which races are recognised or which subspecies grouping they may fit into, and we have little faith that any criteria on which assessment decisions might be based would stand up to universal scrutiny. Consequently, the assessment of claims is on hold, but we recognise that distinctive-looking and -sounding individuals do occur and that these most probably represent one or more vagrant races. We continue to welcome high-quality submissions, especially those containing images and voice data. Trapped birds should have full biometrics taken and any feathers lost during the handling process should be preserved for molecular analysis. Molecular evidence already exists for some past claims but needs to be considered in relation to a wider taxonomic framework not yet in place. Although claims may not be assignable to a specific form, it may be possible to assign them to a group, such as 'Southeastern Lesser Whitethroats'. (Shirihai *et al.* 2001)

Common Whitethroat *Sylvia communis icterops* and *S. c. rubicola*

These eastern races of Common Whitethroat are not on the British List, although a number of claims of *icterops* are under review. Both *icterops* and *rubicola* may be identifiable owing to their cold, grey plumage tones (with greatly reduced rufous tones on the wings), while biometrics and moult strategy may offer some support. However, it is unclear whether *S. c. volgensis*, which forms a clinal bridge between the familiar *S. c. communis* and eastern *rubicola*, may resemble *icterops* and *rubicola* in certain key characters. Consequently, a ringing recovery from breeding birds seems the only way to be certain of racial origin at present.

We welcome reports of suspected eastern races, which will be treated informally at present. Photographs, recording of song, detailed biometrics and stray feathers lost during ringing may be particularly valuable. Although claims may not be allocated to a specific form, it may be possible to assign them to a group, such as 'Eastern Common Whitethroats'. (Shirihai *et al.* 2001)

Subalpine Warbler *Sylvia cantillans albistriata* and *S. c. moltonii*

Records of races other than nominate *cantillans* should be submitted to BBRC, as these are still genuine rarities. There are currently a number of accepted records of the relatively distinctive south-east European *albistriata*; claims should be supported by detailed notes and, preferably, photographs. There are no British records of *moltonii*, from the west Mediterranean islands. Although Gantlett (2001) suggested that a bird at Portland, Dorset, in 1975 was of this race, this proved not to be the case; the published photograph was not an accurate colour reproduction of the bird, owing to deterioration of the original slide, while contemporary notes on the underpart coloration and the call prove that this bird was a *cantillans*. This race is currently thought to be diagnosable only by call, and claims will be considered only if detailed notes on vocalisations (and preferably recordings) are available. BBRC is currently attempting to establish criteria for the separation of ages other than adult males. Once that process is complete, we will then assess records of other age/sex groups. (Gantlett 2001; Shirihai *et al.* 2001)

Greenish Warbler *Phylloscopus trochiloides nitidus*, 'Green Warbler', and *Ph. t. plumbeitarsus*, 'Two-barred Greenish Warbler'

There is just one accepted British record of *nitidus*, from the Caucasus Mountains region, and three of the east Siberian *plumbeitarsus*: Although some first-year *nitidus* are striking, a minority of (the regular) *P. t. viridanus* may appear somewhat similar, while some worn *nitidus* appear indistinguishable from *viridanus*, at least in the field. In terms of 'Two-barred Greenish Warbler', some *viridanus* can show a median-covert wing-bar, so this feature alone is not sufficient to confirm identification; a full set of *plumbeitarsus* characters is required. The identification of both races requires care, and detailed notes, ideally supported by photographs and perhaps sound recordings, are a prerequisite; only classic examples are likely to be accepted. (van der Vliet *et al.* 2001)

Common Chiffchaff *Phylloscopus collybita tristis* (including *Ph. c. fulvescens*), 'Siberian Chiffchaff'

Although the occurrence of 'Siberian Chiffchaff' in Britain is supported by specimen records, its status here is unclear. The numbers reported suggest that it is a scarce but regular migrant and, to some extent, a winter visitor. However, the criteria used to assess records vary markedly from region to region, and there are suggestions that it is being over-recorded and may actually be rather rare in western Europe.

Genuine *tristis* can be identified by a combination of voice and plumage details; the strongest evidence is plumage coupled with song, but over-reliance on song would seriously affect any attempts to establish status and might lead to the conclusion that *tristis* was a rare spring migrant. Plumage alone offers the weakest support for identification, and it is not apparent that the real characters of *tristis* are fully understood. Some of the most distinctive 'eastern' Common Chiffchaffs are strikingly pale and grey, with white underparts; these do not correspond to the typical appearance of *tristis* and are better regarded as presumed eastern *Ph. c. abietinus*, which is a regular migrant to Britain. Calls are useful but rarely diagnostic, as many of these grey-and-white birds and even some recently fledged juveniles of British *Ph. c. collybita* utter calls similar to the plaintive monosyllabic note typical of *tristis*.

BBRC proposes to regard this taxon as a genuine rarity pending clarification of its status; we do not yet intend to assess claims, but would like to monitor records from county and regional reports before deciding on the best way forward. We would distinguish between birds which are seen but not heard; seen and heard calling; and seen and heard singing. Some counties already categorise records along these lines, and we encourage all local and regional committees to seek detailed submissions of this race, and sound recordings wherever possible. A good *tristis* appears rather brown on the upperparts, has a 'mackintosh-buff' wash along the flanks and on the ear-coverts, lacks yellow in the plumage except at the bend of the wing, has olive confined to the fringes of the wing and tail feathers, has a rather short and predominantly black bill, and utters a plaintive, monosyllabic 'iiihp' call-note. Any chiffchaff which does not match these criteria should not be assigned to *tristis*. (Dean & Svensson 2005; Constantine *et al.* 2006)

Willow Warbler *Phylloscopus trochilus yakutensis*

There are no accepted records of this race, which breeds in eastern Siberia, but several have been suspected. Owing to marked plumage variation within the western races, especially *Ph. t. acredula* (a regular passage migrant which intergrades with *yakutensis* in Siberia), biometric data, preferably supported by photographs, will be a minimum requirement for acceptance.

Long-tailed Tit *Aegithalos caudatus caudatus*, 'Northern Long-tailed Tit', and *A. c. europaeus*

BBRC has not previously assessed claims of vagrant Long-tailed Tits but we now propose to consider reports of white-headed *caudatus*. We also welcome images of birds approaching, but not quite matching, the typical appearance of *caudatus*, and details of ringing recoveries that indicate the occurrence of other races.

'Northern Long-tailed Tit' is on the British List and, although its occurrence has not been closely monitored, it seems genuinely rare (with perhaps fewer than 30 British records), although prone to occasional small invasions. In most cases, identification is straightforward, as classic white-headed *caudatus* is a striking and beautiful bird. However, as well as the possible pitfall of a leucistic or otherwise aberrant local bird, intergrades should be borne in mind (*caudatus* interbreeds freely with the central European *europaeus* across a narrow band from Denmark eastwards and these intergrades could potentially occur in Britain). Key identification features include head pattern (although some pure *caudatus* do show some faint grey streaking on the head-sides behind the eye), tertial pattern (the precise extent of white on each feather), and the colour of the underparts.

The continental *europaeus* is also on the British List, but is extremely difficult to identify. Differences from British *A. c. rosaceus* are often slight, but paler *europaeus* (with reduced colour saturation, plainer and paler ear-coverts and underparts and restricted lateral crown-stripes) might be detectable; and these are themselves difficult to distinguish from some *europaeus* × *caudatus* intergrades (and biometrics offer



Bill Baston

355. 'Northern Long-tailed Tit' *Aegithalus caudatus caudatus*, Westleton Heath, Suffolk, February 2004.

no support). Furthermore, variation within British *rosaceus* causes further complications, as do occasional records of *caudatus* (or *caudatus*-like) birds intergrading with *rosaceus*, the offspring of which may resemble the somewhat intermediate *europaeus*. Given these difficulties, the validity of British *rosaceus* is perhaps questionable; nonetheless, images of any Long-tailed Tits resembling one of the rare races would be welcomed. (Harrap & Quinn 1996; <http://www.warbler.phytoconsult.nl/gallery.htm>)

Crested Tit *Lophophanes cristatus cristatus* and *L. c. mitratus*

Both continental taxa are on the British List and most of the (few) records of Crested Tit away from core breeding areas of the Scottish *L. c. scotica* probably refer to one of the continental races. Racial identification is difficult, even in the hand, but we are keen to receive details of any birds away from Scotland when good photographs exist. A ringing recovery may be required to determine precise racial origin, and reports will be treated as informal at present. A review of existing records is planned.

Willow Tit *Poecile montanus borealis*, 'Northern Willow Tit', and *P. m. rhenanus*

There are two accepted records of the north European *borealis* (and several other claims are under review), while the central European *rhenanus* has been suspected in Britain at least once. Many *borealis* seem readily diagnosable but some worn individuals of the British race *P. m. kleinschmidtii* pose a potential pitfall. Also within the '*borealis* group', the races *P. m. baicalensis* and *uralensis* could potentially occur here. It would be difficult to confirm *rhenanus* without a ringing recovery, although photographs of suspected *rhenanus* would be welcomed as informal submissions. (Limbert 1984; Harrap & Quinn 1996)

Woodchat Shrike *Lanius senator badius*, 'Balearic Woodchat Shrike', and *L. s. niloticus*

In terms of accepted British records, there are three of the west Mediterranean *badius*, but none of the southeast European *niloticus*. Identification of *badius* depends on accurate assessment of wing pattern supported by a range of plumage features and bill structure as described by Small & Walbridge (2003). Occasionally, juvenile Woodchats in autumn may be suspected of being *niloticus* based on unusually advanced post-juvenile moult and wing- and tail-plumage details; claims will be treated informally at present while diagnosability issues are further investigated. (Small & Walbridge 2003)

Western Jackdaw *Corvus monedula soemmerringii*

Western Jackdaw *Corvus monedula soemmerringii*

Owing to variation within nominate *monedula*, which is a regular but seemingly under-recorded migrant from Scandinavia, together with intergrades between that form and the eastern *soemmerringii*, we are not aware that the latter can be safely identified in the absence of tangible proof of origins. Nonetheless, we welcome photographs of suspected *soemmerringii* for our files. (Harrop 2000; Offereins 2003; <http://www.xs4all.nl/~calidris/monedula.htm>)

Common Starling *Sturnus vulgaris faroensis*, *S. v. poltaratskyi* and *S. v. tauricus*

Only the breeding and regular migratory races *S. v. vulgaris* and *S. v. zetlandicus* are on the British List, although birds from western and central Asia have occasionally been suspected here. Subtle variations in the colour of plumage gloss and, in some cases, the colour of fringing on flight feathers are the key differences between the races. It may be possible to confirm that a bird originates from beyond the range of the regularly occurring races without establishing exactly which race is involved. Biometrics may offer limited support but are unlikely to be diagnostic, and a ringing recovery would be the ideal way to establish origins; claims will be treated informally at present.

Common Chaffinch *Fringilla coelebs spodiogenys/africana*, 'African Chaffinch'

Since the early 1990s, several birds showing characters suggesting the North African forms *spodiogenys* and *africana* have been reported from Britain and elsewhere in northwest Europe. All those reported from Britain have shown clear and distinctive African Chaffinch-like traits but also important and often recurring anomalies which prevent their acceptance as either form; exactly what such birds are remains a mystery. We encourage submission of all records of birds resembling Chaffinches of either of these North African races, in particular those accompanied by photographs, biometrics and/or recordings of the calls, which may provide important identification clues. (Clement 1993; *Brit. Birds* 97: 211; Constantine *et al.* 2006; Mullarney 2006)

Arctic Redpoll *Carduelis hornemanni hornemanni*, 'Hornemann's Arctic Redpoll'

Arctic Redpoll was removed from the BBRC list at the end of 2005, but the Greenland race *hornemanni* (of which there are currently 24 accepted records) currently still fulfils the criteria for a national rarity, and does not seem prone to irruptions (unlike *C. h. exilipes*). However, the criteria for the separation of this race in the field are not clear, and *hornemanni* has surely occurred more often than the published record indicates. We encourage the submission of photographs of any Arctic Redpolls considered to be good candidates for *hornemanni*, the larger of the two races, but it is possible that positive identification may depend on biometrics. (Millington 1996; Riddington & Votier 1997; Votier *et al.* 2000; Pennington & Maher 2005)

Common Crossbill *Loxia curvirostra*

Recent work based mainly on vocalisations suggests that various forms of Common Crossbill coexist in western Europe. Each 'population' appears morphologically identical but has vocalisations which may be sufficiently distinct to prevent intermixing. If this is the case, some forms may warrant recognition at racial (or specific) level. Work on this topic is still in its infancy and at present we have no means of assessing claims; voice recordings of suspected vagrants would be welcome for our files. (Robb 2000; Constantine *et al.* 2006)

Lapland Bunting *Calcarius lapponicus subcalcaratus*

Lapland Buntings from Northeast Canada and Greenland have long been suspected of occurring in Britain (Williamson & Davis 1956) and circumstantial evidence indicates that in some years they may outnumber nominate *lapponicus*, which presumably originate in Scandinavia or farther east. This race is not on the British List, since confirmation of its occurrence (by either a ringing recovery or biometrics) is lacking. However, a recent review of statistics from Fair Isle, Shetland, showed that seven males trapped there had wing lengths above 98 mm, the first of these being on 10th October 1953. A recent review of biometric data suggests that any Lapland Bunting with a wing length above 98 mm should be recorded as *subcalcaratus*. We welcome the submission of data on trapped birds, both past and present, which show a wing length over 98 mm (this should include bill measurements). Data will be collated to help to establish patterns of occurrence and this race may turn out to be a scarce or even regular migrant. (Garner in press.)

Snow Bunting *Plectrophenax nivalis vlasowae*, 'Siberian Snow Bunting'

This eastern taxon is not on the British List but has occasionally been suspected. Diagnosis is extremely problematic, owing to variations within other taxa, and we seek only informal submissions, of images of birds showing characters of this race. (Byers *et al.* 1995)

Appendix I. Races presumed to be occurring regularly in Britain

The following taxa are examples of races that are rarely or erratically recorded in Britain, but which are presumed to occur too frequently to be regarded as real rarities. All are considered likely to be significantly under-recorded owing to diagnosability problems; some are evidently irruptive, and consequently erratic in their occurrence. Claims are not sought by BBRC, although in many cases we will attempt to monitor locally published records, and in some cases records will be summarised in the Scarce Migrants Report.

Common Guillemot *Uria aalge hyperborea*

This race is on the British List based on biometric evidence, which seems to be the only means to confirmed identification in a British context. Based on its distribution and movements, this race probably occurs regularly in British waters, where it remains largely undetected. Ideally, locally published records should contain the biometric data used to establish identification.

Razorbill *Alca torda torda*

Little Auk *Alle alle polaris*

Comments as for the *hyperborea* form of Common Guillemot.

Great Spotted Woodpecker

Dendrocopos major major

Great Spotted Woodpeckers of Scandinavian origin are assumed to occur too frequently for this subspecies to be classed as a genuine rarity but birds are usually hard to detect (unless trapped), except by context (e.g. as migrants in the Northern Isles).

Bluethroat *Luscinia svecica cyaneola*, 'White-spotted Bluethroat'

Annual reports of this central and southern European race might suggest that it is a genuine rarity in



356. Male 'White-spotted Bluethroat' *Luscinia svecica cyaneola*, Landguard, Suffolk, March 2005.

Kit Day

Britain, but since only spring males are considered safely diagnosable it is clearly under-recorded and is more likely to be a scarce migrant.

Coal Tit *Periparus ater ater*

This continental taxon appears to be a scarce annual visitor to Britain but there are occasional reports of larger irruptions. Owing to the difficulty of identification, many probably go unnoticed. We are particularly keen to see descriptions of known continental birds, based upon ringing recoveries.

Eurasian Treecreeper *Certhia familiaris familiaris*

Although we suspect that this race, which breeds in Scandinavia, occurs in Britain quite regularly

and is better regarded as a scarce rather than rare migrant, we are keen to confirm its status. For example, all 40 Shetland records (at least those trapped or collected, or seen well in the field) refer to this race. We are particularly keen to see details of birds known to be ringed on the breeding grounds in northern Europe.

Eurasian Jay *Garrulus glandarius glandarius*

Occasional large-scale irruptions provide the clearest indication of the occurrence of this rather subtle race. The paler, colder appearance of some *glandarius* might attract attention, although the appearance of many Scottish breeders (*G. g. caledonicus*) approaches that of the nominate form. Since new arrivals may disperse inland quite widely, identifying single individuals is probably impossible without the benefit of biometrics.

Goldfinch *Carduelis carduelis carduelis*

There are no confirmed British records of this continental race but it presumably occurs here, at least as an occasional passage migrant. The difficulty of diagnosing nominate *carduelis* in Britain may actually call into question the subspecific validity of the local breeding race *C. c. britannica*; at present, we seek only claims supported by a ringing recovery.

Common Redpoll *Carduelis flammea islandica* and *C. f. rostrata*

Based on locally published records, Common Redpolls of northwestern origin (Iceland and Greenland) occur annually in Britain in some numbers, especially in the Northern Isles. Others are presumably overlooked to some extent. (Riddington & Votier 1997; Reid & Riddington 1998; Pennington & Maher 2005).

Bullfinch *Pyrrhula pyrrhula pyrrhula*, 'Northern Bullfinch'

Occasional large-scale invasions of the nominate form from Scandinavia are well known. Small numbers, less readily detectable outside irruption events unless supported by biometrics, are known to occur in most years. Recent work suggests that the recently documented 'trumpet' call is diagnostic of 'Northern' Bullfinch and does not occur in other populations. (Constantine *et al.* 2006; Pennington & Meek 2006)

Acknowledgments

BBRC members, past and present, have conducted original and sometimes extensive research into the diagnosability of many of the taxa listed, and it is planned to make the outcome of such research available in BB in many cases. In addition, we thank all those who have answered our queries about the diagnosability of various taxa via informal discussions and requests for information, and all who have conducted and published their own research which we have consulted when drawing our own conclusions.

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In addition to *BWP* and Svensson (1992), all of the available family monographs that give details of the taxa listed have been consulted, as have a wide range of British and European magazines and journals. In addition, the eurobirding.com website at <http://www.eurobirding.com/birdingmagazines/articlesearch.php> offers a useful search function that allows recent papers, articles, notes and letters discussing racial identification from the following journals and magazines to be identified: *Alula* (Finland); *Birding World* (UK); *Birds Illustrated* (UK); *Birdwatch* (UK); *British Birds* (UK); *DOFT* (Denmark); *Dutch Birding* (The Netherlands); *Fugle i felten* (Denmark); *Fugle og Natur* (Denmark); *Ornis Svecica* (Sweden); *Ornithos* (France); *Vår Fågelvärld* (Sweden).

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'Northern Long-tailed Tits' *Aegithalos caudatus caudatus*

Dan Powell

Conservation research news

Compiled by Ken Smith, Simon Wotton and Graeme Buchanan



How many bird extinctions have been prevented?

Over 1,200 bird species in the world are currently threatened with extinction, of which 179 are classified as 'Critically Endangered' – the highest threat category. In the face of these statistics it is difficult to remain optimistic, but a recently published paper gives real grounds for hope. Stuart Butchart, Alison Stattersfield and Nigel Collar of BirdLife International have analysed the population data for a small group of species that were critically endangered in 1994 and were the subject of focused recovery programmes between then and 2004. Of the 27 species examined, 16 would probably have become extinct, or functionally extinct, before 2004 if it had not been for conservation interventions. Thirteen of these species are now increasing in numbers, one is stable and two are declining. The majority of species involved live on islands and the conservation actions include

habitat protection and management (75%), control of invasive species (50%) and captive breeding and release (33%). Two, Zino's Petrel *Pterodroma madeira* and Bald Ibis *Geronticus eremita*, occur in the Western Palearctic, while the others occur in other zoogeographic regions. In addition to these species, a further ten were judged to have been saved from extinction by conservation programmes prior to 1994.

The message is absolutely clear. The knowledge and the tools are available to prevent extinctions; all that is needed is to mobilise the resources and political will to bring this about on a sufficiently large scale.

Butchart, S. H. M., Stattersfield, A. J., & Collar, N. J. 2006. How many bird extinctions have we prevented? *Oryx* 40: 266–278.

Rapid declines reported for common British moths

Declining breeding populations of many common British birds is a story all too familiar to *BB* readers and a comparable situation has also been described for vascular plants and butterflies. In a recent paper, K. F. Conrad and his colleagues have demonstrated that there have been severe national population declines among common and widespread macro moths (Lepidoptera) in Britain in recent times. The declines are at least as great as those recently reported for British butterflies, and exceed those of British birds and vascular plants.

Population data on macro moths were taken from the Rothamsted Insect Survey, which has gathered one of the longest-running datasets of a species-rich insect group, having been established in the early 1960s. The survey has operated a national network of around 100

light-traps annually since 1968, providing standardised, nightly counts of individual moth species from a wide range of habitats. The annual total number of all macro moths caught decreased by 31% over the sampling period (1968–2002). The majority of this decrease occurred in southern Britain, with the north showing no significant trend. Overall, 75% of species declined in the south of the UK compared with 55% in the north.

Data were analysed for 337 species over the sampling period. Two-thirds of these species have declined over the 35-year period and 71 species (21%) showed declines of more than 30% over a ten-year period. If the quantitative IUCN 'Red List' criteria are applied at the national scale to these 71 species, they would be considered for designation as endangered or vulnerable.

The overall pattern of decline points to a widespread deterioration of suitable environmental conditions across the country. Compared with the recent study on UK butterflies, this study includes a greater number of species from a wider range of habitats and the results are thus likely to be more representative of insect biodiversity. At present, evidence of factors causing these declines is lacking, but the next highlighted priority is to examine in greater detail the relative roles of climate, chem-

ical and light pollution, and land-use changes.

These findings have important and worrying implications for a range of other species. The caterpillars of macro moths are a critical food source for the nestling young of many bird species and adult moths are a key element in the diet of bats (Chiroptera).

Conrad, K. F., Warren, M. S., Fox, R., Parsons, M. S., & Woivod, I. 2006. Rapid declines of common, widespread British moths provide evidence of an insect biodiversity crisis. *Biol. Conserv.* 132: 279–291.

Is climate change disrupting Black Grouse breeding cycles in Finland?

Climate change is widely recognised as a major threat to biodiversity. However, the impacts it will have on species are largely speculative, and the ways in which populations will respond are generally unknown. Gilbert Ludwig and his colleagues have recently described a mechanism by which climate change may affect annual chick survival and hence population sizes and population cycles of Black Grouse *Tetrao tetrix*. Using data collected in Finland since 1987, they found that mating date (observed at leks) and hatching date (which occurs about 40 days after mating) were temperature dependent, correlating with the mean maximum temperature in the last three weeks of April (warmer temperatures lead to earlier mating). Using climate and grouse population data available for each year since 1964, they suggested that, following a warming of April temperatures, mean mating date had advanced by about one day per decade.

Hatching also occurred earlier, with peaks ranging from 9th to 19th June. June temperatures affected chick survival post-hatching, with more chicks surviving when the temperatures in the first ten days after hatching were warmer. Survival decreased with lower temperatures, although the reason for this observed reduction is unknown; possible causes include starvation, hypothermia or predation. Worryingly, while April temperatures appear to have increased,

resulting in earlier hatching, June temperatures have remained stable over the past 40 years. This asynchrony in temperature change could result in increased chick mortality, with chicks hatching during the colder period at the start of June, rather than warmer, more favourable periods later in the month, which in turn could result in substantial population declines.

The interplay between April and June temperature, hatching date and survival may also explain the apparent change from a six-year population cycle to a seven-year cycle in the mid 1980s across Finland. Population models suggest that an increased frequency and severity of perturbations in breeding success would initially increase the cycle period, before it disappears altogether. Changing temperatures, fitting the observed patterns since the mid 1980s, could cause such perturbations.

The authors concluded by observing that, when looking at the effects of climate change on species, rather than simply observing the consequences it is important to identify the underlying mechanism. Such understanding may mean that the potential effects of climate change can be tempered by appropriate management responses.

Ludwig, G. X., Alatalo, R. V., Helle, P., Lindén, H., Lindström, J., & Siitari, H. 2006. Short- and long-term population dynamical consequences of asymmetric climate change in Black Grouse. *Proc. Roy. Soc. Lond. B* 273: 2009–2016.

Reviews

BIRDS AND CLIMATE CHANGE

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Wolfgang Fiedler and Peter
Berthold. Academic Press,
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This book contains a series of papers published in 2004 as a volume of *Advances in Ecological Research*, itself based on a workshop held in 2003. The 21 renowned international contributors, primarily from European countries, examine our current knowledge of the effects on birds of climate change. Given the enormous proliferation of research projects and literature on this subject, the authors have achieved this review competently and clearly, providing guidelines for future studies but pointing out the pitfalls and problems.

The emphasis is upon Europe, where the effects of climate change seem to be clearer, and the ornithological datasets more comprehensive, than for other continents. Each chapter begins with a summary and ends with appropriate references. Unfortunately, only author and publication details are given.

The first three chapters discuss migration and emphasise that the various existing studies are disparate, of different periods and cover diverse regions; also, that predictive climate models are often not good at a regional level. Nevertheless, a wide variety of species across Europe are clearly arriving

earlier in spring as temperatures rise. As habitats are climatically modified, migrants are more likely to meet problems in refuelling, especially where they rely on specific staging sites. The next two chapters discuss reproduction, highlighting the fact that phenology has provided much of the evidence of the consequences of climate change. Unfortunately, reactions differ across the components of the food chain and between environments, leading to mistiming between reproduction and food. This itself varies within and among species and, with the rate of climate change varying both regionally and temporally, the pace of natural selection is unlikely to be maintained. For widespread species, adaptation to a wide range of climatic conditions can be at least as large as predicted climate changes, and populations are therefore better able to cope.

The next chapter reviews the problems inherent in long-term population studies and lists questions to be asked when analysing results. This is followed by a chapter discussing the most important environmental cue used to synchronise a bird's activities, namely photoperiod. Climate change may make this a less reliable cue, while range changes will present novel conditions that may initiate adaptations but will also mean that evolution may not keep pace with these adjustments. A discussion on microevolutionary change follows, suggesting that, although birds have a high potential for adaptive evolutionary change, more research is needed into the constraints on such

changes, which have both genetic and environmental components. One familiar example to us in Britain is the increase in the wintering of Blackcaps *Sylvia atricapilla* from central Europe.

Next is a fascinating chapter on the consequence of climate change on population size, which lists many studies of both local and large-scale climate phenomena. The main effects on our altricial species occur in the non-breeding season through weather-dependent losses, whereas nidifugous birds are influenced by breeding-season weather through recruitment. Although the theoretical consequences of climate change on both range and bird communities are set out in the penultimate chapter, the authors conclude that surprisingly few effects have been reported from field data, although not many studies have been made. However, the latest research, not included in this book, is now confirming the predictions. Since studies are biased towards passerines in northern temperate climates, the editors highlight the need for investigations into both non-passerines and other climate zones, concluding the book by identifying further areas of research.

I found this a really fascinating résumé of our current understanding and the editors are to be congratulated on making the results more generally available. It is a publication that every ornithological library should hold but I feel that only those birders with a real in-depth interest in the subject matter are likely to buy it.

Norman Elkins

THE BIRDWATCHER'S GUIDE TO DIGITAL PHOTOGRAPHY

By David Tipling. Ilex Press, Lewes, 2006. 144 pages;
colour photographs. ISBN: 1-904705-84-7. Paperback, £14.99.

A quick flick through this slim volume reveals a stunning,

colourful and comprehensive array of photographs, of subjects ranging

from the Robin *Erithacus rubecula* in your back garden, through to Bald Eagles *Haliaeetus leucocephalus* in Alaska and hummingbirds (Trochilidae) in Panama, and all stations in between. This book covers a lot of ground in 144 pages!

If you buy a digital camera

these days, it will be virtually obsolete by the time you take it out of the box, since the technology moves on so fast and the manufacturers make sure their customers remain strapped firmly over that barrel! This means that a book of this type runs the risk of being quickly outdated: the picture of the 8 GB compact flash card on page 46 may now look impressive as state of the art, but for how long? However, the author has cleverly avoided the pitfalls here by limiting his references to specific equipment, focusing instead on the general, timeless concepts of his art.

The book is divided up into three sections, entitled 'Equipment', 'Photographing Birds' and 'Digital Photo Editing', and within these sections there are over 50 subsections in total (usually 2–3 pages each), covering a wide range of topics which explain the whole process of bird photography in general, and digital photography in particular. A lot of the ground may have been covered before and the actual 'digital' component features only in the final third of the book, but it will be useful for the

beginner to have all the basics to hand. The author's clear and logical style of writing guides the reader carefully through the digital maze. Obviously, it is difficult to cover all the ground in such a short space, and some of the more technical aspects of digital editing will require further research. There could be a case for adding a few extra pages on the more difficult technical aspects of Photoshop. For example, a statement like 'Sharpening in ACR should not be confused with sharpening in Photoshop for output' could do with further elaboration. Similarly, the section on editing RAW images does not make it clear to the newcomer that the original RAW file is not altered by the editing process. However, the author quotes useful references for further reading on these topics. Good luck with 'Using your Curves' is all I can say!

Digiscoping is also covered briefly, but is described in one place as a 'craze', its main merit being the extra magnification it offers. The author also includes a generous helping of practical tips, gained from many years' experience all over the world. I particu-

larly liked his tips of using a shower cap on your camera in the rain, and a sawn-off loo-roll tube to give you a glare-free view of your display screen! At last, something inexpensive in the kit bag!

A useful glossary of technical terms appears at the end of the book, with clear explanations. The index alongside it is slightly quirky, containing not only useful concepts such as 'multi-pattern metering', but also a random selection of items mentioned only in passing (e.g. 'accidents', 'lawns' and 'kitchen windows'). Page numbers are missing from some pages, which can be irritating when you are trying to look something up.

Minor quibbles aside, the amount of information and stunning photographs in this book should inspire the beginner to try their hand, and this publication covers all the basic tools necessary to get to grips with all aspects of the photographic process. If you also have the time, talent, vision, endless patience, single-minded determination and money of the author, you've surely cracked it!

Bill Baston

**TO SEE EVERY BIRD
ON EARTH:
A FATHER, A SON AND
A LIFELONG OBSESSION**

By Dan Koepfel. Penguin,
London, 2006. 278 pages.
ISBN 0-141-01926-3.
Paperback, £8.99.

Although the title might suggest so, this is not another in a run of recent books describing the author's efforts to obtain a large list, be it worldwide, regional or

over a twelve-month period. Certainly, Richard Koepfel is one of the top world-listers, having seen in excess of 7,000 species, but this book is primarily about how birding has affected his relationships and career. It is written by his son, who over the years has come to gain a great insight into his father's obsession, and indeed come to understand it. This is a very well-written book and well worth a read. I am sure that many other 'dedicated' birders will relate to some, or even all, aspects of Richard Koepfel's story – the sheer

joy of birding, the angst of maintaining relationships with parents or family who really don't understand why birding can be such an all-consuming passion, the sacrifices made to try and maintain relationships and, ultimately, the complete breakdown of a marriage. I think that the book would appeal to non-birders too, although I'm not sure whether encouraging your partner to read it will have a positive impact or the complete opposite!

Paul Harvey

THE DESIGN AND EVOLUTION OF BIRDS

By Philip Snow. Day One Publications,
Leominster, 2006.
256 pages; many black-and-white illustrations.
ISBN 1-84625-002-1.
Paperback, £9.00.

This is a beginner's book about the structure, biology and mythology of birds. Liberally scattered with biblical references, it is aimed at a fundamentalist Christian, anti-evolution audience. The scientific and, indeed, religious arguments are shaky. Many people will find it an excruciating read.

Martin Collinson

A HISTORY OF THE BIRDS OF SOMERSET

By David K. Ballance,
illustrated by Tom Raven and
Brian Slade. Isabelline Books,
Penryn, 2006. xii + 368 pages;
colour frontispiece and 40
colour photographs; 35 text
illustrations and two maps.
ISBN 0-9552787-0-9,
hardback, £44.00;
ISBN 0-9552787-1-6,
paperback, £24.00.

The title of this book is a little misleading since it is far more than just a history. The aim, in addition to updating earlier works, is to give a more detailed picture and to view species in an historical context. The author explains why it was decided not to follow neighbouring counties in producing a distribution atlas.

In the introduction there is a description of the area covered, which is the 'new' county of Somerset; the same area as in the 1988 avifauna but 18% smaller than that covered in 1968. There follows a history of ornithology in the county, from the time of the first published list in 1849/50 to the present day. The introduction describes the county area by area in some 30 pages, highlighting the diverse nature of the countryside.

This section is particularly good, describing in some detail changes in land management and human population growth, with their effect on birds. The 40 colour photographs have been chosen to illustrate the varied topography of the county.

The bulk of the book is taken up by the species list, more than 260 pages. All species recorded since 1750 are included; on 31st December 2004 the list stood at 349 species, 20 more than in 1988, of which 157 have probably bred. Each species account begins with a line summarising the current status. In species with ten or fewer occurrences, all records are given. Most species are allotted at least half a page, but in some cases up to two and a half pages allow for detailed summaries. Next comes a history of the species in Somerset. In the case of Pied Flycatcher *Ficedula hypoleuca*, for example, the history occupies a whole page. Then comes a description of localities where that species may be found. This section often pinpoints gaps in knowledge as well as describing current status more fully. Where surveys have been made of areas such as the Levels, Blackdown Hills, the Quantocks and Exmoor, summaries of the results are given under the relevant species.

The coloured frontispiece is of Black-tailed Godwit *Limosa limosa* and throughout the species accounts are attractive vignettes of birds, often depicted in identifiable Somerset localities, adding considerably to the interest of the text. At the rear of the book are two maps, one of the Avalon Marshes and adjacent areas of the Levels and one, in colour, of the whole county.

The final chapter is titled 'Long Ago' and deals with archaeological finds. Among species recorded in cave deposits and elsewhere is the Ptarmigan *Lagopus muta* and this is illustrated by my favourite vignette, showing the bird in a snowy Mendip landscape 10,000 years ago!

The book ends with a list of observers who have submitted records since 1974, of societies concerned with Somerset birds and a very comprehensive gazetteer. Finally there is a bibliography of some 600 references (the most recent are for 2005), and a note on collections held in museums of Somerset-taken specimens.

This is a good example of what a local avifauna should be, thorough in its treatment and attractively produced. I can recommend it to anyone having an interest in the area covered.

David Warden

UK 500: BIRDING IN THE FAST LANE

By James Hanlon.
Brambleby Books,
Harpenden, 2006.
136 pages; colour photographs
and illustrations.
ISBN 0-9543347-8-7.
Paperback, £9.99.

This is the latest in a line of books documenting personal birding experiences. I have read and enjoyed them all to a greater or lesser degree, from Kenn Kaufman's spellbinding *Kingbird Highway* to Sean Dooley's highly amusing *The Big Twitch*. All have a

single theme, but are diverse in their own subject matter. James Hanlon comes across as a fanatical birder and his quest to see 500 species in Britain & Ireland before his 30th birthday is the tale of this book. There are 13 chapters, all describing fast and furious, 'mega moving' trips in search of rare vagrants. James's personal drive to make eye contact with megas is no more evident than in his tale of the Lundy Ancient Murrelet *Synthliboramphus antiquus*. An unsuccessful trip saw him lose part of his ear in a road traffic accident; unperturbed and with the blessing of his mother he continued on his way after having it glued back on! I was particularly entertained by the

Scilly Common Yellowthroat *Geothlypis trichas* chapter, which reveals James's love of dance music and partying. He actually began the twitch for this bird from the legendary Liverpool nightclub Cream! Of course along with the glory, comes the misery of the dips, and surely the most exciting of these is the Long-tailed Shrike *Lanius schiach* sea rescue.

I thoroughly enjoyed this book and wholeheartedly recommend it. It's great to see some nice field notes and it is evident that James is a talented artist and photographer; the Masked Shrike *L. nubicus* illustration in particular is superb.

Micky Maher

News and comment

Compiled by Adrian Pitches

Opinions expressed in this feature are not necessarily those of *British Birds*

Bird imports ban 'should stay'

The temporary ban on importing wild birds into the EU has lasted more than a year, but it's up for review later this month. The ban was imposed in October 2005 to contain the spread of H5N1 'avian flu' following the deaths of infected birds at a quarantine facility in Essex.

Sacha Cleminson, Senior European Advocacy Officer at the RSPB, said: 'The import ban has thrown thousands, perhaps millions, of birds a lifeline and it would be a tragedy if the ban were to be lifted when it is reviewed in December. We already know that this could happen because the EU is under

pressure from some of the countries that export exotic birds. If those countries can prove that seizing wild birds does not reduce their numbers, there might be grounds for resuming a limited trade. But there is little evidence for this and if we are to stop birds from going extinct, the ban should be made permanent until there is.'

The EU is responsible for 87% – about one million birds annually – of the trade in birds listed by CITES, the Convention on International Trade in Endangered Species, with the trade in non-CITES birds thought to be even greater. A report commissioned by

the Belgian Government says that exporting countries could make up to €72 million annually by eliminating the costs of bird exports and increasing ecotourism.

Julian Hughes, Head of Species Policy at the RSPB, said: 'Up to 60% of birds caught for the pet trade die before they reach their destination. This is an horrific toll, particularly when almost every bird wanted as a pet could be bred in captivity in the UK. There is overwhelming support for the unsustainable and squalid trade in wild birds to be outlawed. There is no justification for it, particularly when birds bred in captivity make much better pets.'

Sutton Fen will be RSPB's 200th reserve

The RSPB is set to notch up its double century of reserves secured for birds, for people, for ever. The society has launched a £1.5 million appeal to buy 170 ha of pristine Norfolk Broadland at Sutton Fen.

On its website, the RSPB says: 'Sutton Fen is one of Norfolk's best-kept secrets. It lies in the heart of the Norfolk Broads and yet probably fewer than 50 people will have walked on parts of it over the last 100 years. It is an exceptionally rich area of Broadland Fen, a fragile corner of unspoiled landscape and is one of the most

important conservation sites in the country. The RSPB has been waiting for the chance to acquire Broadland habitat of this quality for at least 20 years. In the past, wetland like this covered large swathes of eastern England. Today, after drainage for agriculture, industry and tourism, it is confined to a few small pockets in the landscape.'

If funding and legal agreements are secured, the society hopes to confirm that Sutton Fen has become its 200th reserve later this month. This milestone will have

been reached 76 years after the RSPB acquired its first reserves, in Kent. In 1930, the society purchased Cheyne Court on Romney Marsh, which was subsequently sold in 1950 as drainage of surrounding land had reduced its wildlife value. This area has now received planning permission for a controversial 26-turbine windfarm; a High Court challenge to that decision was rejected in October. The oldest existing RSPB reserve (announced in 1932) is 1,000 ha of the Dungeness peninsula purchased in 1930.

Bald Ibises tracked to Ethiopia

The satellite tracking of three Bald Ibises *Geronticus eremita* from the tiny Syrian population has solved the mystery of their wintering grounds (www.rspb.org.uk/tracking).

The trio (two males and a female), together with an untagged bird, were located in the highlands of Ethiopia in October, almost 30 years since the last Bald Ibis was seen in the area, in 1977. Thirteen birds – two breeding pairs, six

juveniles and three subadults – left the breeding site in Palmyra, Syria, in July 2006. Three birds were tracked to Ethiopia via Jordan, Saudi Arabia, Yemen and Eritrea.

Despite good breeding success in Syria, where the birds are protected by Bedouin nomads and Syrian government rangers, the colony's numbers have not increased. Mystery still remains as to where the subadult birds spend

their time before returning to the breeding colony. And it is feared that hunting, overgrazing and/or the heavy use of pesticides, including DDT, somewhere along the birds' migration route have been keeping numbers low.

'They have chosen well because Ethiopia is famous for its protection of wildlife and their last port of call was Yemen where the government is also supportive,' said

Chris Bowden of the RSPB, who has been involved with the project since the tiny Syrian colony was discovered four years ago. 'We thought the birds would go to Yemen, Eritrea or Somalia and were surprised at the length of

their journey – 3,100 km – and the speed with which they covered the distance.'

The Yemeni Environment Minister, Abdul-Rahman F. al-Eryani, saw the birds while they were in Yemen. He said: 'I was very excited to

find that the birds could once more be seen in Yemen. We recognise the importance to our country of their migration and we will be waiting for them to return on their way back to Syria. We will do our very best to see them safely on their way.'

Stone Age bird trapping in France

The hunting of songbirds using stone crush traps restarted in the French Central Massif in November. The traps consist of limestone slabs weighing several kilograms, propped up on twigs and baited with berries. Birds trying to reach the berries brush against the twigs and are buried under the falling slab. The victims of this literally Stone Age hunting method are mainly thrushes (*Turdidae*) and Common Chaffinches *Fringilla coelebs*, but species such as Sky Lark *Alauda arvensis*, Meadow Pipit *Anthus pratensis* and Blue Rock Thrush *Monticola solitarius* are also caught in these traps.

The German Committee Against Bird Slaughter (CABS), which is campaigning to have the traps banned, estimates that up to 120,000 stone crush traps are set in the Lozère and Aveyron Départements, resulting in the non-selective killing of countless birds. 'Most birds are not killed at once. Many lie in the traps for hours with dreadful crush injuries and broken bones,' said Alex Hirschfeld, a CABS biologist who has monitored and documented this form of hunting in France.

Until now, the use of this non-selective form of trap, called a *tendelle* in French, was banned throughout Europe to protect species listed under the EU Birds Directive. But Mme Nelly Olin, the French Environment Minister, has permitted the use of these traps once more. The Minister has based her decision on the development of a new model of the trap, with which only legal quarry species are supposedly caught. But random checks in the neighbourhood of the towns of Millau and Florac also discovered numerous protected bird species in the *tendelles*. In order to combat this form of hunting, conservationists have now appealed to the European Commission and have started a Europe-wide protest campaign.

There are pictures and text (in German) on the CABS website www.komitee.de/index.php?tendelles

Meanwhile, songbird smugglers have been caught again in Germany. Customs officers at Munich's Erding airport discovered 2,643 dead Meadow Pipits in the luggage of an Italian travel group. According to the travellers, the birds came from Romania and were destined to be served up as delicacies in Italian restaurants. In 2004, an Italian was caught with 2,100 Meadow Pipits in his luggage. According to Alex Hirschfeld, 'Birds are imported illegally from eastern Europe to meet the demand of gourmets and chefs.' CABS believes that more than 50 tonnes of dead birds are smuggled annually from the Balkans into northern Italy.

Breckland wins SPA status

Nearly 40,000 ha of farmland, forest, heath and grassland straddling the border of Suffolk and Norfolk has been classified as a Special Protection Area (SPA). This will ensure that many of the area's rare and vulnerable birds, such as Stone-curlew *Burhinus oedichenus*, European Nightjar *Caprimulgus europaeus* and Wood Lark *Lullula arborea*, will be safeguarded.

Minister for Biodiversity Barry Gardiner said: 'Breckland SPA contains nationally important numbers of these birds so it is vital that we take the necessary measures to conserve and enhance their habitats. However, this classification will also help the region economically. Farmers are more likely to be eligible for higher payments under agri-environment schemes if they can demonstrate they are looking after protected sites.'

Great Bustard releases continue

The reintroduction of young Great Bustards *Otis tarda* from Russian stock to Salisbury Plain continued this year, despite the ban on bird imports into the EU imposed to control the spread of avian flu (see above).

A further nine birds were released onto the Plain in Wiltshire in October. The three male and six female birds are considerably older than those released in 2004 and 2005. This was inevitable because of the delay caused by a lengthy quarantine period when the young bustards arrived in the UK from Russia.

David Waters, chairman of the Great Bustard Group (www.greatbustard.com), said that the nine birds were tested for avian influenza before they left Russia and have been repeatedly tested in special quarantine conditions in the UK prior to their release. He told the *Wiltshire Times*: 'Predicted problems with transporting and keeping the older and larger birds in quarantine did not materialise and the larger birds may fare better against foxes [*Vulpes vulpes*] in their first few months in the wild. Foxes remain the greatest threat to the Great Bustards until the birds are about nine months old and then they are relatively safe.'

The Great Bustard Group released 22 young bustards on Salisbury Plain in September 2004 and a further 33 in August 2005. Although predation by foxes and collision with fences and power lines have taken their toll, at least 12 of the birds released in the two previous years are alive, which represents a survival rate equivalent to that found in the wild populations of Great Bustards.

UK's global responsibility for endangered birds

The importance of the UK's Overseas Territories for birds, many of which are threatened with extinction, has been highlighted by BirdLife in a new report.

The report identifies 78 priority sites for conservation action, stretching from the remote Pitcairn Islands in the Pacific to Bermuda, and from Gibraltar to the Falkland Islands. The diversity of bird species nesting in the UK's Overseas Territories (UKOT) includes one-third of the world's species of penguins (Spheniscidae) and albatrosses (Diomedidae), one pelican (Pelecanidae), one flightless duck (Falkland Island Steamer Duck *Tachyeres brachypterus*), five hummingbirds (Trochilidae) and two parrots (Psittacidae). But fewer than half of the 78 priority sites have been afforded any official protection.

The UKOT hold 34 species considered under threat of extinction

and a further 13 species of global conservation concern. Of these, 22 are confined to the UKOT and a further 15 probably have their most important breeding sites in the UKOTs.

The threatened species include the Critically Endangered Montserrat Oriole *Icterus oberi*, which is confined to the Caribbean island and which lost more than half of its world range in a devastating volcanic eruption in 1997. Seven species of albatross and five species of petrel (Procellariidae) with important nesting populations on the UKOT are affected by the impacts of longline fishing in the Southern Ocean, particularly in the south Atlantic. Since many of the territories are relatively small and remote islands, non-native, invasive plants and animals have had a devastating impact on birds and other wildlife of the UKOT. In particular, introduced rats and

mice are having significant effects on both landbirds and seabirds.

Commenting on the importance of the UKOT, the RSPB's Chief Executive, Graham Wynne, said: 'These crown jewels for conservation hold more species of bird under the threat of extinction than the whole of Europe, and the threats to them are very real. Several birds found only on UK overseas territories have become extinct in the last few hundred years, putting the UK in the list of the world's top five countries for bird extinctions.'

The RSPB's Sarah Sanders, author of the report, added: 'In addition to the variety of species, the concentrations of seabirds, in particular, are staggering. There could be up to 50 million pairs of seabirds nesting on our territories, making the UK one of the most important nations for marine wildlife.'

CHOGging along for 50 years

Many birders will be familiar with Christchurch Harbour on the Dorset coast, with Stanpit Marsh and Hengistbury Head having played host to a number of rarities over the years. This year, the organisation dedicated to the study and conservation of the area's wildlife, Christchurch Harbour Ornithological Group (CHOG), celebrates its golden jubilee: it's 50 years since the late Frank Clifton's first ornithological survey of the harbour in 1956. The group has recorded and studied the birds systematically ever since, publishing the results in its excellent annual reports and online at www.chog.org.uk

Integral to CHOG has been the Christchurch Harbour Ringing Station. Some 49,000 birds of 120 species have now been ringed and migration studies remain a major focus. The harbour's location at the confluence of the rivers Avon and Stour helps to concentrate migrants and major 'falls' can

occur. Extensive reedbeds in the harbour serve as valuable feeding and roosting sites, and recent studies have concentrated on birds using this resource. The harbour is compact geographically being only 9 sq. km, but nevertheless has a great diversity of habitats, from heathland, grassland and oak *Quercus* woods to saltmarsh and tidal mudflats.

Despite its size, 318 species of bird have currently been recorded in the harbour area, with rarities such as Little Crane *Porzana parva*, Terek Sandpiper *Xenus cinereus*, Ross's Gull *Rhodostethia rosea*, Zitting Cisticola *Cisticola juncidis*, Northern Parula *Parula americana* and Bobolink *Dolichonyx oryzivorus*. It is as a passage, wintering and breeding site that Christchurch Harbour is really important, however, with wintering populations of Dark-bellied Brent Goose *Branta bernicla bernicla* and Black-tailed Godwit *Limosa limosa*, and breeding species, including European Nightjar, Wood

Lark and Dartford Warbler *Sylvia undata*.

CHOG's 50th anniversary will be celebrated on 8th December with a talk by Richard Coomber entitled *Wildlife Wanderings – Where East meets West – A cruise from Japan to Alaska via Kamchatka*. The meeting is at 7.30 pm at the Regent Centre, Christchurch.

Staff needed

Fair Isle Bird Observatory is seeking an Assistant Warden, a Seabird Monitoring Officer and a Ranger for the 2007 season. Applicants should have good field skills and preferably a 'C' ringing permit and a head for heights. For details, contact Deryk Shaw, FIBO, Fair Isle, Shetland ZE2 9JU; e-mail fairisle.birdobs@zetnet.co.uk, tel. (01595) 760258.

These posts provide a good grounding for all sorts of jobs in the ornithological world!

Farewell to Philippa

Philippa Leegood joined *British Birds* in June 1999 to take over the physical production and promotion of the journal, a job she continued to do until her sudden and

tragic death in late October. Many *BB* readers and contributors will have talked to or met her over the years, by telephone, e-mail or at the *BB* stand at the British Birdfair. She

was at the heart of *BB*: chivvying and chasing contributors, co-ordinating, dealing with the printers and the mailing house, always trying to improve, to do better. She was responsible for translating the editorial vision into physical reality and, I think most will agree, she did this very well.

But Phil was much more than just a good production manager. She was warm, funny, caring and a good

friend. The seven years we worked together were a delight. She had a wicked sense of humour and a sharp eye for the pompous and absurd. We looked forward to her arrival every morning and missed her when she was away.

We knew that she was not strong and had heart problems: none of us realised quite how seriously ill she was – but it was typical of Phil to play down her concerns. She collapsed at her desk and was taken to the Brompton Hospital where unfortunately her condition could not be stabilised and she died there a few weeks later. Donations in her memory may be made to the Royal Brompton & Harefield Charitable Fund (c/o Royal Brompton Hospital, Brompton Wing, Sydney Street, London SW3 6NP) or online at www.guch.org.uk; GUCH is a charity which supports people born with congenital heart defects.

(Contributed by Amanda Helm)

Philippa Leegood family collection



357. Philippa Leegood with Dan.

Request

BB on DVD

As we reported last year (*Brit. Birds* 98: 563), as part of plans to mark our 100th volume we hope to produce a DVD containing all the editorial from the last 100 years. We have looked at various possibilities, and we believe that the most exciting option is to produce a DVD featuring a series of pdfs of the original pages; these would be fully searchable by species, author, keyword, etc., as well as being available chronologically, and we think that it would be an excellent way of making *BB*'s fantastic archive of material much more widely available. The sale price of the DVD is as yet undetermined since the full production costs are still unknown.

The copyright of all photographs and illustrations in *BB* remains with the photographer and illustrator respectively and, unless a waiver has been signed, authors retain copyright of their articles. This would be stated clearly and unequivocally on the disk. The product that we envisage would reproduce text, photos and illustrations exactly as they appeared in the original; it would not, therefore, be a 'new' use of the material. However, the format would be new, and we have to treat the issue of copyright extremely carefully. If we have to reimburse contributors a second time for the publication of their material in this

new format, the project simply will not happen. Our main objective is to produce the DVD as a valuable resource, rather than for commercial gain, but clearly we cannot risk significant financial liabilities.

For the project to happen, we need photographers, artists and authors to agree to the reproduction of their material in *this format only* without payment of royalties. If you have contributed to *BB*, we would like to hear your views, supportive or otherwise. Please contact us by e-mail at adrianpitches@blueyonder.co.uk; or by post at the Editorial Office.

Recent reports

Compiled by Barry Nightingale and Eric Dempsey

This summary of unchecked reports covers mid October to mid November 2006.

Red-breasted Goose *Branta ruficollis* Donna Nook and Saltfleet (Lincolnshire), two, 13th October to 8th November; Ferrybridge (Dorset), 4th–8th November. **Black Duck** *Anas rubripes* Ventry Harbour (Co. Kerry), 20th October; Fair Isle (Shetland), 1st–5th November. **Ferruginous Duck** *Aythya nyroca* New Hythe Gravel-pits (Kent), 12th–30th October; Studland (Dorset), 13th October; Leighton Moss (Lancashire), 4th November; Chew Valley Lake (Somerset), up to two long-stayers 19th October to 5th November. **Lesser Scaup** *Aythya affinis* Leighton Moss, 15th–22nd October; Pine Lake (Cumbria), long-stayer to 23rd October. **Barrow's Goldeneye** *Bucephala islandica* Quoile Pondage (Co. Down), from 4th November (presumed wintering drake from last year).

White-billed Diver *Gavia adamsii* Kirkabister (Shetland), from 24th October; Cape Clear Island (Co. Cork), 24th October to at least 3rd November; Girdleness (Northeast Scotland), 1st November.

Cattle Egret *Bubulcus ibis* Lodmoor (Dorset), two, 15th–16th October; Fairburn Ings (West Yorkshire), 15th October; Elmley (Kent), 17th October; Dungeness (Kent), 18th–20th October; Hanningfield Reservoir (Essex), 24th October; Abberton Reservoir (Essex), 29th October; near Colaton Raleigh (Devon), 30th



Graham Catley

358. Adult Red-breasted Goose *Branta ruficollis* with Dark-bellied Brent Geese *B. bernicla bernicla*, Rimac, Lincolnshire, October 2006.



Steve Young

359. Glossy Ibis *Plegadis falcinellus*, Pilling, Lancashire, October 2006.



John Malloy

360. Juvenile American Golden Plover *Pluvialis dominica*, Tresco, Scilly, October 2006.



361. First-winter Whiskered Tern *Chlidonias hybrida*, Titchwell, Norfolk, October 2006.

October to 4th November; Blakeney (Norfolk), long-stayer to 23rd October. **Great White Egret** *Ardea alba* Ballylickey (Co. Cork), 9th October; New Swillington Ings (West Yorkshire), 11th–31st October, also Broomhill Flash (South Yorkshire), 24th–29th October; Cliffe Pools (Kent), 12th October; Dinham Flats (Cornwall), 14th October; Farlington Marshes (Hampshire), 15th October; Horseshoe Point (Lincolnshire), 17th October; Grainthorpe Haven (Lincolnshire), 21st October. **Purple Heron** *Ardea purpurea* Lough Donnell (Co. Clare), 1st–10th October. **Glossy Ibis** *Plegadis falcinellus* Long-stayer Pilling, Cockerham Marsh and

November; perhaps same, North Wootton (Norfolk), 5th November.

Killdeer *Charadrius vociferus* North Uist (Western Isles), 19th October, Oronsay (Argyll), 21st October. **Kentish Plover** *Charadrius alexandrinus* Isle of Sheppey (Kent), 10th–11th October; Pagham Harbour (West Sussex), 24th October. **American Golden Plover** *Pluvialis dominica* Crowland/Deeping (Lincolnshire), 6th–28th October; Fen Drayton Gravel-pits (Cambridgeshire), 9th October; Doonbeg (Co. Clare), 11th–13th October; Old Moor (South Yorkshire), 11th October; Roscarberry (Co.

Cork) 15th October to 4th November; Hilgay Fen (Norfolk), 15th–17th October; Holy Island (Northumberland), 15th–21st October; Loch Ryan (Dumfries & Galloway), 16th–29th October; Donna Nook, 16th October; Kidwelly (Carmarthenshire), 17th–19th October; Carrahane (Co. Kerry), 18th October; Lewis (Western Isles), 22nd–29th October; Bannow Bay (Co. Wexford), 24th October; Paxton Pits (Cambridgeshire), 27th–31st October; Annagh Beach (Co. Mayo), 28th October to 3rd November;



362. Adult European Roller *Coracias garrulus*, Beal, Northumberland, October 2006.

Maxey Gravel-pits (Cambridgeshire), 30th–31st October; South Uist (Western Isles), 31st October; Lady's Island (Co. Wexford), 3rd–4th November; Colliford Lake (Cornwall), 4th November; Waxham (Norfolk), 4th–8th November.

Semipalmated Sandpiper *Calidris pusilla* Cross Lough (Co. Mayo), 21st October. **Least Sandpiper** *Calidris minutilla* Hayle Estuary (Cornwall), 10th–15th and 25th October. **White-rumped Sandpiper** *Calidris fuscicollis* Cley (Norfolk), up to three, 10th–31st October, with two to 7th November; Nosterfield (North Yorkshire), 12th October; Cloughy (Co. Down), two, 14th–16th October; North Ronaldsay (Orkney), 14th–20th October; Tacumshin (Co. Wexford), up to seven on 15th October, with six still present there on 5th November; Ballyferris (Co. Down), 16th October; Annagh Beach, 16th October; Belfast Harbour (Co. Down), 19th October and 3rd–4th November; Ballycotton (Co. Cork), 20th and 31st October, with two 3rd–4th November; Dungeness, 22nd October; Loch Gruinart (Argyll), 24th–26th October; Black-rock Strand (Co. Kerry) 29th–30th October.

Long-billed Dowitcher *Limnodromus scolopaceus* Ban Estuary (Co. Derry), 12th–13th October. **Lesser Yellowlegs** *Tringa flavipes* Roscarberry, 13th October to 4th November; Clonakilty (Co. Cork), 21st October; long-stayers at Cross Lough (Co. Mayo), up to 16th October and Dundrum Bay (Co. Down) up to 5th November. **Spotted Sandpiper** *Actitis macularius* Hayle Estuary, long-stayer to 8th November.

Bonaparte's Gull *Larus philadelphia* Castlegregory (Co. Kerry), 19th–24th October. **Whiskered Tern** *Chlidonias hybrida* Titchwell (Norfolk), 13th–20th October. **Forster's Tern** *Sterna forsteri* Cruisetown Strand (Co. Louth), long-stayer to 4th November.



Rebecca Nason

363. Blyth's Pipit *Anthus godlewskii*, Fair Isle, Shetland, October 2006.



Gary Bellingham

364. Blyth's Pipit *Anthus godlewskii*, St Mary's, Scilly, October 2006.

Rebecca Nason



365. Red-throated Pipit *Anthus cervinus*, Fair Isle, Shetland, October 2006.

Ian Fisher



366. First-winter Siberian Rubythroat *Luscinia calliope*, Sunderland, Co. Durham, October 2006.

Hugh Harrop



367. First-winter Red-flanked Bluetail *Tarsiger cyanurus*, Unst, Shetland, October 2006.

Brünnich's Guillemot *Uria lomvia* Flamborough Head and Withernsea (both East Yorkshire), 2nd November. Long-billed Murrelet *Brachyramphus perdix* Dawlish (Devon), 7th to 12th November at least; Little Auk *Alle alle* Heavy passage along the east coast of England and Scotland in early November, including: 2,543 past the Farne Islands (Northumberland), 1st November; 1,637 Fishtown of Usan (Montrose), 2,179 Farne Islands, 6,000 Newbiggin (Northumberland), 3,049 Whitburn (Co. Durham), 1,700 Hartlepool Headland (Cleveland), 1,092 Scarborough (North Yorkshire), 2,400 Flamborough Head, 752 Sheringham (Norfolk), all 2nd November; 652 Eccles (Norfolk), 3rd November; 2,400 Kinghorn Harbour (Fife) and 672 Dunbar (Lothian), 5th November.

Snowy Owl *Bubo scandiacus* Dooley (Co. Donegal), 8th–12th October at least. Alpine Swift *Apus melba* Sunderland (Co. Durham), 22nd October; Gibraltar Point (Lincolnshire), 23rd October. Pacific Swift *Apus pacificus* Horsey (Norfolk), 21st October. European Bee-eater *Merops apiaster* Lodmoor (Dorset), 15th October. European Roller *Coracias garrulus* St Mary's (Scilly), 15th October; Beal (Northumberland), long-stayer to 19th October.

Crag Martin *Ptyonoprogne rupestris* Badshot Lea (Surrey), 22nd October. Red-rumped Swallow *Cecropis daurica* Porthgwarra

(Cornwall), 13th October; Donna Nook, 5th November; Cley, 7th November; Port Carlisle (Cumbria), 8th November; Hoswick (Shetland), long-stayer to 19th October.

Blyth's Pipit *Anthus godlewskii*

Sumburgh (Shetland), 12th October; St Mary's, 17th–18th, then Bryher 20th (both Scilly), with another St Mary's 22nd–26th October; Fair Isle, 22nd–24th October.

Olive-backed Pipit *Anthus hodgsoni*

Fair Isle, 10th and 15th–23rd October; Spurn (East Yorkshire), 14th and 21st October; North Ronaldsay, 14th October, with two 15th, one to 16th; St Mary's, 18th–20th October; Sumburgh, 20th October; Gibraltar Point, 31st October.

Pechora Pipit *Anthus gustavi*

Foula (Shetland), 9th–13th October; Virkie (Shetland), 14th–15th October. **Red-throated Pipit** *Anthus cervinus* Fair Isle, 12th–15th October; Dursey Island (Co. Cork), 16th October; Cape Clear Island, 16th–18th October; Landguard (Suffolk), 16th October; Ballylanders (Co. Cork), 18th October; Ashleworth Ham (Gloucestershire), 4th November.

Thrush Nightingale

Luscinia luscinia South Ronaldsay (Orkney), 13th October; Fair Isle, 25th–28th October. **Siberian Rubythroat** *Luscinia calliope* Sunderland, at least 26th–27th October. **Red-flanked Bluetail** *Tarsiger cyanurus* Unst (Shetland), 13th–16th October; Thorpeness (Suffolk), 16th–24th October; Whalsay (Shetland), 21st–25th October; Brae (Shetland), 23rd October.



Kit Day

368. First-winter Red-flanked Bluetail *Tarsiger cyanurus*, Thorpeness, Suffolk, October 2006.

Pied Wheatear *Oenanthe pleschanka* Bryher, 20th–21st October.

Desert Wheatear *Oenanthe deserti* Meikle Loch (Northeast Scotland), 21st October; St Agnes (Scilly), 27th October, with another St Mary's, 1st–6th November; Cooden Beach (East Sussex), 31st October to 4th November. **Hermit Thrush** *Catharus guttatus* Cape Clear Island,



Nic Hallam

369. Desert Wheatear *Oenanthe deserti*, Cooden Beach, East Sussex, October 2006.

www.irishbirdimages.com



370. Hermit Thrush *Catharus guttatus*, Cape Clear Island, Co. Cork, October 2006.

Gary Beilingham



371. First-winter American Robin *Turdus migratorius*, Tresco, Scilly, October 2006.

Ian Fisher



372. Arctic Warbler *Phylloscopus borealis*, Boddam, Shetland, October 2006.

19th–20th October. American Robin *Turdus migratorius* Tresco (Scilly), 10th–28th October.

Aquatic Warbler *Acrocephalus paludicola* St Mary's, 19th–25th October. Blyth's Reed Warbler *Acrocephalus dumetorum* St Mary's, 30th October to 1st November. Great Reed Warbler *Acrocephalus arundinaceus* Dunwich (Suffolk), 14th October. Booted Warbler *Hippolais caligata* Bryher, 13th–14th October, another St Mary's, 15th–23rd October; Mizen Head (Co. Cork), 20th October. Sub-alpine Warbler *Sylvia cantillans* Cape Clear Island, 10th–13th October; Lundy (Devon), 13th and 19th–20th October; Old Head of Kinsale (Co. Cork), 15th October; Chapel Porth (Cornwall), 16th October.

'Two-barred Greenish Warbler' *Phylloscopus trochiloides plumbeitarsus* St Agnes, 10th–12th October; Filey (North Yorkshire), 16th–18th October. Arctic Warbler *Phylloscopus borealis* St Mary's, 13th October. Pallas's Leaf Warbler *Phylloscopus proregulus* Sumburgh, 11th–17th October; Skirza (Highland), 13th–14th October; Fladdabister (Shetland), 14th October; Denge Marsh (Kent), 15th October; Filey, 16th October; Saltfleet, 16th October; Salt-house (Norfolk), 17th–18th October; Gibraltar Point, 17th October; Nanjizal (Cornwall), 18th October; St Martin's (Scilly), 19th October; Reculver (Kent), 19th–20th October; Whalsay, 20th October;

Whitburn, 21st November; Gower (Glamorgan), 21st–22nd October; Lowestoft (Suffolk), 22nd October; Hengistbury Head (Dorset), 25th–26th October; St Catherine's Point (Isle of Wight), 28th October; Churchtown, 30th October. Radde's Warbler *Phylloscopus schwarzi* Landguard, 10th–12th October; Horseshoe Point, 12th October; Start Point (Devon), 14th October; Scousburgh (Shetland), 15th October; Castlesea Bay (Angus), 15th October; Filey, 16th–17th October; South Gare (Cleveland), 16th October; St Mary's, 18th–19th October; Holy Island (Northumberland), 20th October; Bardsey (Gwynedd), 29th, with two 30th October. Dusky Warbler *Phylloscopus fuscatus* Gunton (Suffolk), 27th October; Hayling Island (Hampshire), 2nd November; Lowestoft (Suffolk), 4th–8th November; Portland (Dorset), 5th November. Western Bonelli's Warbler *Phylloscopus bonelli* St Mary's, long-stayer to 21st October; St Martin's, 18th–20th October. Western/Eastern Bonelli's Warbler *Phylloscopus bonelli/orientalis* Unst, 13th–19th October.

Penduline Tit *Remiz pendulinus* Dungeness, 27th–29th October, with three 4th November. Isabelline Shrike *Lanius isabellinus* Dungeness, 15th October; Old Head of Kinsale, 17th–20th October; St Mary's, 20th October; Great Orme's Head (Conwy), 22nd October; Cresswell Pond (Northum-



Iain Leach

373. Radde's Warbler *Phylloscopus schwarzi*, Horseshoe Point, Lincolnshire, October 2006.



Paul Hackett

374. First-winter Isabelline Shrike *Lanius isabellinus*, Cresswell Pond, Northumberland, October 2006.



Paul Hackett

375. Red-eyed Vireo *Vireo olivaceus*, Kilbaha, Co. Clare, October 2006.

Hugh Harrop



376. Arctic Redpoll *Carduelis hornemanni*, Sumburgh, Shetland, October 2006.

berland), 27th–29th October. Woodchat Shrike *Lanius senator* Soar (Devon), 4th–8th November. Masked Shrike *Lanius nubicus* St Mary's, 1st November.

Red-eyed Vireo *Vireo olivaceus* Kilbaha (Co. Clare), 7th–14th October; St Mary's, 17th–19th October; Bryher, 17th October. Arctic Redpoll *Carduelis hornemanni* Sumburgh, 19th–24th

October; Fair Isle, 25th and 30th October. Blackpoll Warbler *Dendroica striata* Dursey Island, 10th October. Canada Warbler *Wilsonia canadensis* Kilbaha, 8th–13th October.

Rustic Bunting *Emberiza rustica* St Mary's, 29th October. Little Bunting *Emberiza pusilla* Foula, 9th October; Hengistbury Head (Dorset), 10th October; Dursey Island, 11th October; Fair Isle, 11th and 17th October; North Ronaldsay, 13th–14th October; Portland Bill, 14th October; Skomer (Pembrokeshire), 14th October; Unst, 14th–15th October; Out Skerries (Shetland),

14th October; Huttoft Bank (Lincolnshire), 15th October; St Agnes, 16th October; Cape Clear Island, 17th October; South Ronaldsay, 17th October; St Mary's, 18th–20th and 30th October; Spurn, 18th October; Landguard, 19th October; Bryher, 20th October; Studland (Dorset), 1st November; Tresco, up to three, 5th–8th November. Baltimore Oriole *Icterus galbula* Cape Clear Island, 12th–19th October.

John Carter



377. First-winter Canada Warbler *Wilsonia canadensis*, Kilbaha, Co. Clare, October 2006.



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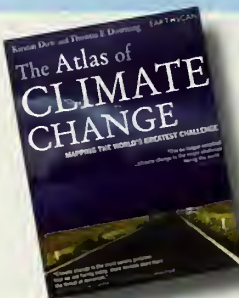
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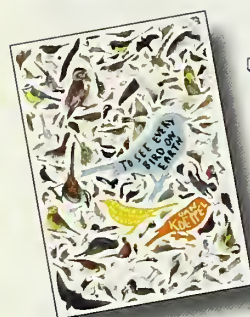


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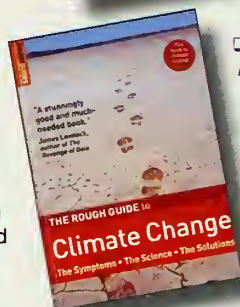


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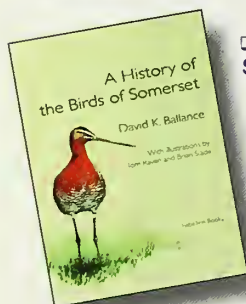
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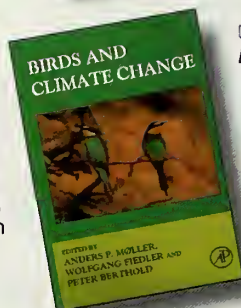
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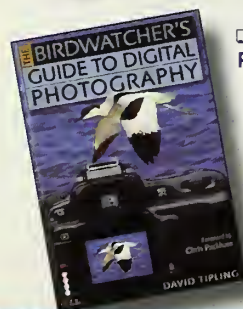


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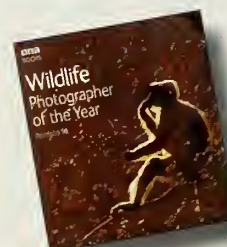


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